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EXECUTIVE DOCUMENTS.

ANNUAL REPORTS FOR 1887,

MADE TO THE

Sixty-Eighth General Assembly

OF THE

STATE OF OHIO,

AT THE

REGULAR SESSION, COMMENCING JANUARY 3, 1888.

PART II.

COLUMBUS:

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FOURTH ANNUAL REPORT
OF THE
CHIEF STATE INSPECTOR
OF
WORKSHOPS AND FACTORIES
TO THE
GENERAL ASSEMBLY OF THE STATE OF OHIO,
FOR THE YEAR 1887.

OFFICE OF CHIEF STATE INSPECTOR OF WORKSHOPS AND FACTORIES,

COLUMBUS, OHIO, *November 15, 1887.*

To His Excellency, JOSEPH B. FORAKER, Governor of Ohio :

SIR: I have the honor to herewith submit to the General Assembly, through you, the Fourth Annual Report of the Chief State Inspector of Workshops and Factories.

Very respectfully, yours,

HENRY DORN, *Chief.*

FOURTH ANNUAL REPORT.

INTRODUCTORY.

In submitting this my fourth annual report, a few thoughts suggest themselves to my mind which it may be well enough to state for the benefit of those concerned. Experience is a valuable teacher, and seldom leads to wrong conclusions. What is acquired in the field of experience one year can be turned to practical account in the cultivation of the same field the next year.

The office of Inspector of Workshops and Factories is not purely humanitarian in its operations. While the work of the inspector is confined to such duties as the physical welfare of the employe requires, yet the proper discharge of those duties has a reflex influence, not only on the employer, but on society generally. If the employer becomes satisfied by experience that his profits increase in proportion as his employes are protected against accidents and the destruction of their health, he will, in accordance with an immutable law that governs the conduct of mankind, be more careful as to their welfare, and not begrudge the expenditure of a few dollars for the purpose of securing their comfort and safety. Human nature is the same, regardless of class or condition; and when a man occupying a humble, subordinate, wage-earning position, sees that his employer is doing all he can to make the work required of him as agreeable as possible, and to protect him from broken limbs, impaired health, etc., he naturally feels a greater interest in the business in which he is engaged, and the profits derived from his labor are correspondingly greater. He works more cheerfully, is less wasteful, and manifests a desire to help his employer for the plain reason that his employer is doing what he can to help him. The benefits as well as the feeling are reciprocal, and each profits thereby.

The inspector is a missionary, and has a large and difficult field to cultivate. He is constantly between two opposing forces, both of which are too often extremely unreasonable. The employe, in many cases, wants that which it is impossible to get, and the employer is frequently inclined to refuse that which is demanded by every consideration of right and fair dealing between man and man, and which the welfare of

not only the employe but of the country at large imperatively requires. His vision is too often limited in range by the gains of to-day, taking no account of the possible losses of to-morrow. Too many employers regard the employe only as they do a machine. He is expected to produce a given amount in a given time, regardless of surroundings or conditions, of risks of death, mutilated limbs, or impaired health—as one whose place, in case of death, can easily be filled. The employe, on the other hand, is too apt to look upon his employer as a task-master, who is continually robbing him, not only of the fruits of his toil, but also of his health. Many regard all employers as being essentially alike, and if one does act in such a manner that his honesty and humanity have to be acknowledged, such act is not infrequently attributed to a selfish motive.

Now, cannot this state of feeling and this crimination and recrimination be changed, and employer and employe be brought to see the merits of each other, and to understand what is most likely to produce a better feeling? It certainly can, to a great extent at least, if both parties only so determine. Employer and employed must learn that each is governed by the same general principle, and has the same object in view. It is the praiseworthy desire of every man to get on in this world as well as possible, so as to render his declining years peaceful and comfortable, and to relieve community of all care and charge on his account when age has rendered him incapable of physical or mental exertion. This is not only right, but it is the duty of every man, a duty he owes to himself, to his family, and to society. He is not a good citizen who neglects, while in the full possession of his mental and physical faculties, to provide for the future, and secure himself and those dependent upon him against all possible contingencies. This right and this duty are so sacred and binding on each and every one, that no man can possibly be justified in doing anything that will in any way interfere with their full and free exercise. Any interference of this kind is not only unjustifiable, but it is a positive crime, a crime that should be frowned upon by all who have any regard for their fellow-beings, or any pride in the welfare and prosperity of the State.

As regards the employer, he has no right to ask any man, woman, or child to work where life is in danger, if the danger be of such a character that he can control it, and by proper care and exercise of proper judgment render it safe and harmless. Poverty and the paternal instinct to care for his wife and children may drive a man (and has so driven untold thousands) to accept employment in places where death is continually staring him in the face. This no employer should be allowed to demand or permit, no matter what the cost in dollars and

cents, if the works, the machinery, the ventilation, can be so arranged as to obviate this danger. It is his duty, a duty he owes not only to his employes, but to the State as well, to see that his establishment is, in every respect, as far as the nature of his business will allow, in as safe a condition as it is possible to put it. An insecure building, liable to tumble down at any time, and unprovided with adequate means of escape in case of fire, so poorly ventilated that death is only a question of time, so far as its occupants are concerned; machinery so unguarded that it is a continual menace to every one whose business requires him to be in its vicinity, should not be tolerated for one moment longer than is necessary to make the required changes. We have laws severely punishing all offenses against the person, excepting this refined, civilized, and, to a great extent, legalized mode of torture and death. A man who attacks another on the highway or elsewhere and kills him is very justly hanged as a murderer; but it is too often the case that a manufacturer tortures a little child to death by means of improperly ventilated work-rooms, or mangles or kills a man, woman, or child by means of unguarded machinery that could, by the expenditure of a few dollars, have been made safe and harmless, and the event is spoken of in the public press as an accident—a deplorable, frightful accident, it may be, but still only an accident. This is not right, and it injures not only the comparatively defenseless, but the State also.

It is to the interest of the employer to make his establishment as agreeable and comfortable to those in his employ as he can; and especially is it to his interest to securely guard in every practicable way every piece of machinery that is capable of inflicting harm. He saves money by such a course. He avoids damage suits, and has few, if any, surgeons' bills to pay. This is so much saved. Then he makes money in the increased and better work of his employes; for no one need be told that a workman who knows that his employer has provided, to the extent of his ability, against all kinds of accidents and against the health-destroying atmosphere that is too often present in workshops, is capable of turning out more and better work than when he knows the contrary to be the case. He is always in a better state of mind, feels more like working, is more ambitious to excel, and entertains the best of feelings for his employer. Such a condition of mind and feeling is certain to show itself in the increased profits of the concern. Men almost invariably, under such circumstances, not only perform more labor, but do it much better than they would under different conditions. The interest of one is the interest of the other, and every thing moves along harmoniously, without any clashing, ill-feeling, strikes or lock-outs.

It is gratifying to be able to say that there are comparatively few

manufacturers in the State who are not willing, yea, even anxious, to do all they can in the direction pointed out above as soon as they are made aware of the need therefor. But there are a few men who seem to think the human race was created especially for their benefit, and regard a laborer about as they do a horse or an ox, valuable according to what they can do for a given compensation. This class of men will do nothing willingly for the comfort and safety of their employes, and regard all interference by State officials in such matters as intolerable impertinence. They look upon a shop inspector as the embodiment of all the evil that is ordinarily attributed to the socialist, anarchist, etc. They cannot possibly imagine what the State has to do with their machinery, safe or unsafe. It belongs to them, and if a workman loses a limb or his life, whose business is it? The building may be a death-trap in case of fire, but in reply to any complaint to that effect the owner will very likely say that no one is compelled to work in it if he does not like it, or that his workmen are at liberty to quit whenever they see proper—he can get plenty of others.

This is a sample of the talk of some manufacturers, but, to the credit of the State and of the race, they are few and far between. The inspector comes across but few such people, and when he does encounter such a one, he can impress upon him the duty he owes to his fellow-man, though an employe, only by making him understand that there is a law—a plain, unambiguous law—for the protection of the working people, and that, if necessary, it will be invoked in behalf of those who are unable to protect themselves.

It is one of the duties—and a very important one, too—of the inspector to point out to the manufacturer the importance of seeing that his establishment is in proper condition; of showing him that he will be the gainer thereby, not only in the saving of needless expenses in the way of damages for injuries received by workmen, but also in the increased earnings of his employes, and, consequently, in his increased profits. This is not always a pleasant duty, and sometimes not properly appreciated. It is frequently met in a very different spirit from that in which it is undertaken. The inspector often meets with rebuffs and insults instead of welcome and thanks; but by perseverance and tact he finally succeeds, in most cases, in accomplishing the main purpose for which the law was enacted. As manufacturers become better acquainted with the practical workings of the law, and learn by experience that they do not lose anything by doing right, their opposition gives way, and they yield with a good grace to the mandates of the State.

In regard to workmen, the same trouble, somewhat varied in character, is met with by the inspector. The vast number of people employed

in the thousands of workshops and factories of the State embrace every conceivable variety. While most of them look at things in the proper light and with the proper spirit, there are some whom nothing will satisfy. It would, of course, be foolish to suppose that in such a large number of people, many of them pinched by want and soured by ill-treatment, engaged in all kinds of labor, and by all kinds of men, there would not be some who would at times overstep the bounds of reason in their demands. They are too prone to seize upon flying reports and refer them to this office for action, as though they were self-evident facts. They do not take into due consideration the wide difference between a fact susceptible of legal proof and the idle talk, sometimes, of an aggrieved workman. This office cannot proceed to extreme remedies unless satisfied that a case can be made and maintained before a legal tribunal. These men, no doubt, mean well enough, but they do not seem to realize as they should that a charge, no matter by whom made, is not conclusive proof of the fact. It is easy enough to make any kind of complaint against a firm, but when it comes to proving its truth it is soon discovered that that is quite a different matter.

Now, the rule that should govern all workmen in their relations with their employers is to treat those employers in all respects as they wish to be treated themselves. It should not be expected that an employer can do everything immediately that any one may think desirable. There are two sides to every question, and both should be carefully considered. If there is any danger to be apprehended from a piece of machinery, for instance, would it not be better to call the attention of the owner to the fact, in a gentlemanly manner, than to write exaggerated accounts of it to the inspector? If the employer is the kind of a man we have good reasons to believe most manufacturers are, he will examine the matter, and if he find the fear of his men well founded, he will be very apt to do what he can to comply with their wishes, and more than likely heartily thank them for calling his attention to the danger. This would be a much better way than the one pursued by some men, of sending off post-haste for the inspector, or giving to a newspaper reporter a highly-colored account of the supposed danger. Confidence between the employer and his workmen works to the advantage of both. When an employer feels that his employes are acting with a view of advancing his interests, he would be a very unusual kind of a man if he should not take an increased interest in their welfare. One good act begets another in return, and it is pretty sure to prove a far better investment in the end than kicks or misrepresentations. True, there are some employers, in fact too many, who are not governed by such considerations, and who will do nothing in the interest of their

workmen but that which they are compelled to do. These men have to be dealt with in a different manner from those who desire to do as near right as they can. If the inspector cannot make himself fully acquainted with all the facts by an examination of the premises, then the employes should take it upon themselves to see that he is enabled to get at the truth, and when he does ascertain the true condition of affairs, all may rest assured he will not in the least shirk his duty. But he does not like to undertake an investigation, under the impression that the law is being daily violated, only to find that the establishment complained of is in as good a condition as any of its kind in the State, and that its owner is strictly complying with the law. This kind of business is extremely annoying, and not infrequently gets the inspector into embarrassing positions.

The right way is the best way. No manufacturer who habitually mistreats his work people, or willfully disregards the laws of the State enacted for the protection of their lives and health, need expect to escape the penalty that so certainly and justly follows wrong doing. It will come sooner or later, in some way or another. As free, willing hands can accomplish much for an employer's success, so can ill-requited toil, and men and women continually exposed to all kinds of danger, pave the way for his financial ruin; and a workman who cares nothing for the interest of the man for whom he works is not likely to advance his own interest. Let some people say what they may, there is a mutuality of interest between the employer and the employed, which, if properly observed, surely leads to the prosperity of both.

BOILERS AND THEIR DANGER.

The number of lives annually lost by the explosion of steam-boilers is so great that it appears almost incredible that the State has done nothing toward securing a proper inspection of so necessary and yet so dangerous an adjunct of our manufacturing industries. It may seem out of place for this office to take notice and treat of this subject, as it is entirely beyond the jurisdiction of the chief inspector; but so many communications are received direct from the parties writing them, and so many that are received by other departments of the State government are referred to him, that the chief inspector deems it his duty to call the attention of the General Assembly to this very important matter.

In all manufacturing establishments of any importance, steam power is a necessity; and in hotels, mercantile establishments, and other large buildings, it has come to be regarded as an essential requisite. Owing to its dangerous character, companies have been established for the purpose of insuring risks of this class. These companies employ the

most thorough experts to frequently examine all boilers insured by them, and, as a natural result, in all establishments conducted on sound business principles, good and safe boilers are found. But there is a vast number of boilers in the State that are not and cannot be insured, owing to their condition. No sound company will touch them, for the reason that they are liable to give way at any time. These are the boilers that the State should look after. It is a question to be determined by the Legislature whether the owners of boilers shall be required to have them insured, or whether the State shall itself undertake the duty of inspection, and compel, under sufficient penalty, full and prompt compliance with the orders of its inspector. It may be that the Legislature does not possess the constitutional power to force parties to insure their property, but no one will question its authority to absolutely prohibit the use of a steam-boiler that, from its worn-out condition, or other cause, is liable at any moment to explode, and thereby cause not only loss of life, but also the material injury and burning of surrounding property. If the State has any duty to perform that is more imperative than another, it is the protection of life and property. This is the main object of all governments. Nothing that is so extremely dangerous, so liable to cause loss of life and valuable property, as steam-boilers undoubtedly are, should be permitted to be controlled by men who know nothing of their nature or care nothing for the consequences of their own ignorance.

One great source of trouble and serious accidents resulting from the use of steam-boilers is chargeable to the unwise policy of manufacturers employing inexperienced and incompetent men as engineers. A position so responsible as that of engineer of a stationary engine is acknowledged to be should not be occupied by a man who knows nothing either of an engine or boiler. Who would think of placing an idiot or a lunatic in charge of a powder magazine? And yet more lives and more property are endangered by the incompetency of an engineer than there would be by placing a powder magazine in charge of a lunatic. Then why does any man incur such a risk to his own safety and that of his property? There is but one answer, if indeed it can be called an answer, viz., an incompetent man will work for less money than a competent man will. Should this be allowed? Should any man, because thereby he may save a few dollars a week, be permitted to endanger the lives of his employes and of his neighbors and to imminently endanger surrounding property? Most men of middle age and past have a vivid remembrance of the frequent occurrence of horrible boiler explosions on our water-ways. They were happening weekly, and hundreds of lives and thousands of dollars' worth of property were continually being killed and burned, or finding a final resting place at the bottom

of a river or lake. It is not so now. It is but seldom that we hear of the boilers of a steamer exploding. What has wrought this wonderful change? Inspection of boilers and competent, licensed engineers. There are qualified men appointed by the General Government to examine every steamer's boilers, and no one can assume the position of marine engineer unless he is armed with the certificate of the government that he has been examined and found to be qualified for the place. Why should not applicants for the position of engineer of stationary engines be subjected to a similar test? To be sure, there may be more lives and more property at stake in the one case than in the other, but legislators are not supposed to measure their duty by the exact number of lives that may be lost or the precise amount of property that may be destroyed in the absence of restraining legislation. If the safety of the lives of a hundred men is sufficient to justify the intervention of the law-making power, then the safety of one life is sufficient. The thousand-dollar little cottage shelters as many precious human beings as the hundred thousand-dollar palace, and the protecting wing of the government should be thrown over each alike.

In answer to the numerous communications received at this office, the parties are advised, in the absence of legislation on this subject, to have their boilers insured in some responsible company. There are plenty of them seeking business. This advice is not given from a dollar-and-cent view of the matter, but because it will insure thorough inspection, and to a very great extent remove the danger of boiler explosions.

As evidence of the general feeling on the subject of boiler explosions, and as a sample of the communications received at this office, the following, from the Secretary of the State Board of Health, is given, as well as the answer thereto:

COLUMBUS, OHIO, *April 22, 1887.*

HON. HENRY DORN, *Chief Inspector of Workshops and Factories, Columbus, Ohio—*

DEAR SIR: I am instructed to forward to you a copy of the following resolution, adopted by the State Board of Health at its last regular meeting.

Respectfully,

C. O. PROBST, M. D., *Sec'y.*

"WHEREAS, Complaints have been made to the State Board of Health that many lives are endangered on account of old and imperfect boilers; therefore, be it

"*Resolved*, That the State Board of Health recommends that an inspection of all boilers be made, and that a copy of this resolution be forwarded to the State Inspector of Workshops and Factories."

Having no authority to do anything whatever in the matter, I forwarded to the State Board of Health this answer:

COLUMBUS, OHIO, *April 25, 1887.*C. O. PROBST, M. D., *Secretary State Board of Health*—

DEAR SIR: Your favor of the 22d instant, covering a resolution adopted by the State Board of Health in relation to defective steam-boilers, is received and noted.

In reply I can only state that the law creating the office of Inspector of Workshops and Factories, and defining the duties of the chief and his assistants (a copy of which I inclose), does not give me any authority to examine or condemn boilers. I have repeatedly urged that they should be subjected to frequent examinations, either by an officer of the State or by an examiner of an insurance company, in which the State should require all boilers to be insured.

The present loose and reckless manner of using these death-dealing instruments would be incredible, were it not for the fact that it comes to the notice, almost daily, of every man in the habit of visiting manufacturing establishments. I can only hope that the next General Assembly will be able to see the great importance of doing something in this matter, and that it may adopt some measure by which the lives of the people of the State will be protected.

Respectfully yours,

HENRY DORN, *Chief.*

The inspectors have, when asked by interested parties, looked after such matters as cracked walls and the chaining down of safety-valves, which is frequently found in small establishments. This is one of the great causes of boiler explosions. The safety-valve should be allowed to work free, and should be kept clean and in good order. This will largely diminish the number of explosions. No competent, careful engineer will ever think of such a thing as tying down his safety-valve, but it is a common occurrence with an incompetent, low-salaried one.

That the positions taken in the foregoing are not novel, or unworthy the consideration of the General Assembly, the following, from an acknowledged expert on the subject of steam-boilers, is given. J. M. Allen, President of the Hartford Steam Boiler Inspection and Insurance Company, writes to the *New York Spectator* the following as the result of his observations:

“After twenty years’ study on the subject among thousands of steam-boilers, I am satisfied that there is little or no ground for mystery here. The principal causes of boiler explosions are poor material, faulty in type, poor workmanship, and careless management. There are new types of boilers devised every year, but the majority have but a short existence. The tendency to employ cheap engineers is no doubt a fruitful cause of disaster, and under careless management the best boiler may be ruined in a week or less. The desire of excessive pressures, especially on boilers that have been some years in use, and that are not of sufficient capacity for the work required, is another fruitful source of disaster. Steam users, in many cases, forget that with the enlargement of their works for increased production they should add correspondingly to their boiler power. They often try to provide for this increase of product by ordering their engineer to increase the pressure on the boilers. This is all wrong, and invites disaster.”

UNJUSTIFIABLE COMPLAINTS.

Complaints frequently come to this office and to the district inspectors of violations of the inspection laws of the State. Sometimes it is charged, with a positiveness that precludes all doubt of its truth, that children under twelve years of age are employed in a certain establishment, and that the ten-hour law is disregarded by the same firm. Again, it is claimed that the machinery is dangerous, or that the building is insecure, or that it is in an unhealthy condition in consequence of imperfect ventilation or other disregard of sanitary laws. These complaints cause a thorough examination to be made, which frequently results in showing that the only foundation on which they rest is the idle talk of parties not employed in the establishment complained of, and in some instances prompted by personal ill-feeling.

This is not as it should be. Charges should not be made against any shop or factory unless the party making them is ready to sustain them by proof. They cause unpleasant feelings on the part of the manufacturer toward this office, by having his attention called to supposed wrongs, of the existence of which he has no knowledge. It frequently happens that when the parties making the charges—making them, too, in the most positive and circumstantial manner—are requested to name the witness who will go into court and swear to the truth of the alleged violations of law, they suddenly become as silent as the grave. Such conduct is calculated to bring the inspectors as well as the law under which they act into disrepute, and ultimately to defeat the very purpose for which the law was enacted and the inspectors appointed, viz., that the condition of the laboring people of the State might be improved, at least to the extent of removing the evils resulting from insecure machinery, bad ventilation, and unsafe buildings, and by keeping children under twelve years of age out of all workshops and factories. False reports cannot possibly do any good; but, on the contrary, they are almost sure to cause hard feelings on the part of employers, and instead of willingly complying, as most of them do, with all reasonable and necessary suggestions and orders of the inspectors, they will feel more like throwing all the obstacles they can in the way of the enforcement of a beneficent law.

A case in point, and one that well illustrates the impropriety of coming to conclusions before thoroughly investigating the matter, is that of The London Rubber Company of Ashtabula. I refer to this because of the pains taken by the company to prove the groundlessness of the charges made against them, and of their evident desire to do everything within the bounds of reason to protect the health of their

employees. An establishment of this kind may mislead, as no doubt has been the case, the casual visitor, and even the district inspector. The odors usually present in such a place are not of such a character as to favorably impress one unused to them with their healthfulness. That the inspector should think the building could and should be improved was very natural, and notwithstanding all the proof the company have submitted, it is quite possible, if not probable, something might be done to lessen the evil that seems to most persons not immediately connected with the works to exist. The district inspector was supported in his position by many of the citizens of Ashtabula, and by several of the employees, and I was bound to believe that he was correct in his judgment. A correspondence ensued between this office and the Rubber Company, which culminated in the latter furnishing such an array of testimony as to the sanitary condition of the establishment that, no matter what others might think, or what I might believe myself, it was evident there was no use in further prolonging the controversy. The company had their works fully inspected by a committee, composed of two physicians of the town and a member of the board of health, and in their report, which was forwarded to this office, they say they failed to find anything about the works that was in the least deleterious to health. The following is the report of the committee:

INSPECTION OF LONDON RUBBER WORKS.

We, the undersigned, after a careful inspection of the London Rubber Works, and personal interview with the employees, submit the following report:

The main building (one-story brick), in which most of the hands are employed, covers nearly one-fourth of an acre, being 75 by 150 feet. It is 15 feet between joists, and has a roof chamber over the whole of about 5 feet in height, ventilated by two windows at each end. This chamber is unused. The spreading-room is 38 by 120, and is partitioned off by board partition, covered with heavy paper. The solvent used is deodorized gasoline of 74° to 76° test. The ordinary commercial article is never used, and we regard the deodorized article as much less disagreeable, even to those unaccustomed to the vapor. The rubber is transferred from the churns to the spreading room, where are employed two men and three to six boys, depending on the number of machines in operation. The gasoline evaporates over an area of 3 by 100 feet, and at no place on the machine is the vapor concentrated. The cubic space in this room is about 68,000 feet, and allows 8,500 cubic feet per capita. There is constantly open an over-head area of 2½ by 4 to 5 feet, and in warm weather the windows, to the number of 13, are open. In very cold weather the machines do not run, since the temperature of the room must be about 70°. This room and the whole works are heated by steam pipes. The operatives in this room appear healthy, and contented with their employment. They do not work full time at spreading, and there is always an interval of about thirty minutes out of every hour and a half, during which there is no gasoline used in the room.

In the sewing, cutting and cementing-room, the cubic contents of which are 102,150 feet, are employed 55 girls and 2 men (rarely are all at work at the same time), allowing between 1,800 and 2,500 cubic feet for each employee. The room has about 17 windows that can be used for ventilation, and an over-head area of 2½ by

50 feet that is open, except in very cold weather. The gasoline used in this room is in the cement, about four gallons of which is open at a time. This is a thick, tarry liquid, and evaporation is very slow, since all impervious rubber film forms an exposure. Each girl at cementing-table has near her about a gill of gasoline in a cup. When all are at work there is not over two to four quarts exposed over an area of 150 by 35 feet, as can be seen in diagram. [Diagram is omitted as being unnecessary.—*Ins.*] The sewing machines are run by steam, and the operatives are at least four feet apart. The cementers are six to eight feet apart. The temperature of both spreading and cementing-rooms, taken on a very cold day, was 70° to 72°, and at the floor 62°.

The accompanying statements were taken in the presence of two or more of the committee, each employe being asked the questions as printed, and where any clue to sickness or ill-health was given the inquiry was followed up. Many of the employes are personally known to us, professionally and otherwise, and we can say that a large per cent. of them work from choice and not from necessity. They appear cheerful, and are but little restrained during work hours. Many of them are positively in better health than when unemployed, as can be personally vouched for by us. Nearly all of them work by the piece, and can come and go when they please, and are at liberty to remain at home when ill, or, as many of them do, to attend to home work a day or so out of the week. Piece-work stimulates a few to work over-hours, and there may be some cases of illness due to such strains; but the universal testimony, shown as well by their general appearance as by their statements, is that the surroundings are conducive to a wholesome and healthful employment of body and mind, and we regard such an opportunity as of not a little benefit to our community. We would also call attention to the fact that out of 44 examined, 22 have been employed three years and over. The works have been open to girls less than four years.

Whatever may be said about gasoline and its bad effects as used for fuel, the crucial test in this instance is certainly the physical condition of the operatives, for whose protection the State legislates; and this report is submitted in proof of the fact that they do not suffer from their surroundings while at work, and that they are generally fairly dealt with by their employers.

The examination was conducted by us, and in no instance was there evidence of employers' influence, nor were they present. Hear-say evidence has been carefully excluded, and in several instances where investigated has been found to be misleading or malicious, and in other instances natural incapacity for work or mere over-work was found to be the cause of temporary disability.

Respectfully submitted,

D. E. BOTTORF, M. D.,

J. DORAN,

THOS. HUBBARD, M. D.

ASHTABULA, *December* 17, 1886.

In examinining the employes the committee prepared written questions, and the answers of one (C. A. Scoville) are given below as indicating the answers of all. The company of the Rubber Works forwarded this evidence, together with the report of the committee, to this office, as follows:

To the Hon. Inspector of Workshops and Factories, Columbus, Ohio:

DEAR SIR: We respectfully submit for your careful consideration the following questions and answers which were voluntarily made by our employes, and were made in the presence of the subscribing witnesses:

Question. What is your name? *Answer.* C. A. Scoville.

Question. Age? *Answer.* Thirty-six.

Question. How long have you been in the employ of the London Rubber Company? *Answer.* Two years.

Question. In which department have you worked? *Answer.* Cutting.

Question. Were you employed by the day or on piece-work? *Answer.* By the day.

Question. Average number of hours per day? *Answer.* Ten.

Question. How much can you earn in ten hours at the regular price of piece-work in your department? *Answer.* Two dollars.

Question. How many days have you been absent on account of sickness that you have reason to believe was due to your employment by the London Rubber Company, not including the time they were not running? *Answer.* None.

Question. What was the condition of your health previous to your employment by said Rubber Company? *Answer.* Good.

Question. What is the condition of your health since? *Answer.* Good.

Question. Are you perfectly satisfied that your health has not been injured by reason of your employment by said Rubber Company? *Answer.* Yes.

Question. Do your parents object to your working for said company because they think it is detrimental to your health? *Answer.* No.

Question. Do your employers use every reasonable means for your comfort, health and safety? *Answer.* Yes.

Question. Do you make the above statement of your own accord, or are you influenced by your employers? *Answer.* Of my own accord.

C. A. SCOVILLE.

We, the undersigned, do hereby certify that C. A. Scoville made answer to the above questions as written, and that he was in no way influenced by any member of the company.

D. E. BOTTORF,
J. DORAN,
THOS. HUBBARD.

There were 43 other statements, all similar in tenor to the above. Of the whole number 4 were male adults, 4 male minors, and 36 females. Of the latter all were over 18 years of age except 4, 3 of whom were 17 each and one 16. The length of time they had been employed in the Rubber Works varied from a few months to four years and over. The entire amount of time lost in consequence of sickness during the period these parties had been employed by this company, according to these statements, was four weeks. In one case the party met with a fall which laid her up for two weeks, and another one lost the same length of time, to use her own language, in consequence of sickness "brought on by overwork and a naturally weak stomach."

With such testimony, from such sources, I could come to but one conclusion, viz., that the true condition of the establishment was not understood by those making the complaint, and that the district inspector was misled by false reports and the effect produced upon the senses by the peculiar character of the business.

ANNEALING AND TEMPERING FINE TOOLS.

Almost every establishment which is using large quantities of fine steel tools, such as milling-cutters, taps, fluted reamers, thread-cutting

dies, chipping chisels, drills, twisted and flat, etc., etc., is losing from ten to fifteen per cent. of these expensive tools when they are first tempered, or as soon as they are put into use, and at least twenty-five per cent. the second time they are tempered, and about fifty per cent. the third time.

To avoid this great loss and annoyance, have your steel annealed by the steel manufacturers in short bars from five to six feet long, or the sizes you may wish for your tools. By doing this your tools will not be unnecessarily overheated, and consequently there will be no uneven strain on the tool.

If your tool is of such a shape that you have to have it forged, do not heat it too quickly, but thoroughly all the way through; do not hammer nor bend the tool unless it is red hot. Do not hammer "cast steel" after the red has all disappeared in any case.

You may hammer steel to refine it at a black heat, but never do this with "cast steel," for it will cause your tool to spring or crack. Forged tools should be annealed and roughed out by planing or turning off below the hammer marks, and then annealed again. This will avoid the springing when tempered.

To anneal small sizes of steel, use iron pipes, plug up one end, put in your tools, then fill up with charcoal dust, plug the other end (this can easily be done with fire-clay), heat it slowly until it is at a good red heat (cherry) all the way through, then bury it in wood ashes. Keep your ashes in a tight iron box with a close cover. For annealing such tools as taps, reamers, milling cutters, dies, etc., etc., use fine wood ashes, dip out the center and replace the ashes with dry sawdust; heat your steel slowly to a cherry red, and bury it in the sawdust and cover it over with fine charcoal dust, put on your cover and let it remain until cold.

For hardening use a good strong salt brine, about three pounds of salt to one pail of soft water, lard-oil and resin, about one-sixth resin to five-sixths of oil. When mixing together, the oil and resin should be quite warm and stirred well.

Heat your tools slowly and thoroughly all the way through, then immerse in the salt brine. If a tap, fluted reamer or any other straight tool, put it down in the center of the tub as straight as you possibly can, move it up and down slowly from one to two inches, so as to avoid a water line, until it is chilled about half-way or one third through, as near as you can judge. This you can easily determine by the tremble of the tongs, caused by the condensing steam around the tool. The tremble will cease when the tool is chilled about half through. Now put the tool from the brine into the mixture of oil and resin as quickly as pos-

sible, move it up and down gently for a minute or two, then drop it into the mixture and let it remain until cold, then take it out, brighten it, test the hardness with a sharp file, and you will find that you have the right temper required.

Tools which are used for cutting cast-iron and brass will require to be tempered harder than those used for cutting wrought-iron. Large tools after remaining in the mixture of oil and resin will sometimes draw the temper a little more than required. To prevent this, have a pail of boiling hot water close to your oil tub, and when you see the mixture boil from the heat of the large tool, immerse it quickly in the hot water for about ten seconds, and then return it as quickly as possible back into the oil tub, and let it remain until the oil stops boiling. You may take a large tool from the oil, brighten a small space of it and hold it over a clean slow fire and draw the temper on the outside to suit your work, then return again to the oil tub and let it remain until cold. It is the safest way to draw the temper on larger tools a little on the outside, at the same time the temper is drawing from the inside, but there is no necessity to draw the temper on most of your tools from the outside.

By tempering tools in this way, you will have a "soft-centered steel." The brine has hardened the tool so far as it is required to be hard, and the oil keeps it hard and allows the center or thick part to cool slowly. It will not throw your tool out of round, but will run on the centers as true as before it was hardened. Milling-cutters, taps and fluted reamers only require to be hard on the cutting parts, and with this process you have just what you want, and you can anneal and harden them a dozen times or more, and never break them.

Chipping chisels, after forged, should be heated slowly at least three inches from the cutting edge, to take off the uneven strain caused by forging. Never hammer a cold chisel after the red has disappeared, especially on the edges. The corners will break off if you do. Immerse in clean soft water at least one and one-half inches, until the water will stop to hiss on the tool. Then brighten about one inch or one inch and one-half from the cutting edge, and draw the chisel to a sky blue, then dip it into cold lard-oil, and let it remain until cold.

If a tap, reamer or any other fine tool should by chance get too hot or burnt, do not take the tool from the fire, but shut off the blast. Get some resin, put it on the tool freely, and let it remain in the fire ten or fifteen minutes, occasionally putting on the resin, and letting the tool cool down to a good cherry red, and then immerse as above described, and your tool is as good as if it had not been overheated.

Steel should not be overheated, and for hardening a cherry red is the best; a furnace is preferable to an open fire or a forge.

SELF-IMPOSED DANGERS.

The force with which habit clings to men and influences their actions is almost beyond belief. The "old way," in the opinion of many men, is much to be preferred to the "new." Though a man's life may be in constant danger under the old way of working, and though new appliances may securely protect the workman from harm, yet this safety device is something new, he has not been accustomed to it, and has not yet been the victim of an accident; therefore it is of no use, and he does not want anything to do with it. Though such a feeling as this is extremely foolish and entirely inexcusable, yet the country is full of men who think they exhibit great wisdom in this kind of talk. They can be found in nearly every shop and factory in the State, and, strange as it may seem, where the danger is the greatest from the use of certain tools and implements, there the indifference seems to be the most profound. Why this is so it is difficult to understand, unless it be that the more a man becomes accustomed to danger by its continual presence the less he fears it, until finally he comes to regard it as harmless. Habit is hard to overcome, no matter how pernicious it may be.

This reckless indifference to danger is well illustrated in the case of workmen who have to use buzz and other dangerous saws. In hundreds of cases in the State manufacturers have provided guards for saws of this character only to have their workmen refuse to use them. There are guards in the market which reduce liability to accident to the minimum, but the men have not been accustomed to their use, and no threatened danger, however great, can induce them to change their habits. They have run saws for years without guards of any kind, and have not met with any serious mishap, therefore they do not apprehend any in the future. When men of this kind are met it is absolutely useless to attempt to reason with them. There are none so blind as those who will not see. They have to be left to the inexorable logic of events. An accident in the factory in which they may be engaged opens their eyes, and the loss of a finger or a hand is an argument that the most perverse mind can comprehend. Therefore, the inspector can only perform his duty by requiring the manufacturer to provide the guards, and leave the balance to time and experience. A case occurred during the past year in Greene county, where the inspector ordered a guard to be put on a certain saw, but before his order had been complied with one of the workmen lost an arm. This was an argument in favor of saw guards that all could and did appreciate. A guard was immediately procured,

and no one thinks of working without it. How much better would it have been for all parties had the inspector's orders been complied with at once. The proprietor would have saved money, and his employe would still be in possession of two good arms. Yet even this kind of evidence, practical and undeniable as it is possible for evidence to be, is not sufficient to convince some men of the reckless, criminal risk they assume in operating these kind of saws without their being properly guarded; as, for instance, in an establishment in Cincinnati, a man running a saw would not use the guard provided by the firm, notwithstanding that at that very time a suit was pending in court for damages for an injury sustained by a former employe from an unguarded saw.

Workmen must take a business view of this matter. It may be impossible to influence them by appeals to their fear of personal injury, but they should remember that there are others who have a deep interest at stake. Most of them have families entirely dependent upon them for support, and when death occurs, or when an accident crippling them for life happens, that support is gone. By using saw-guards an accident from this source is rendered almost impossible; but if one should occur from the negligence of the proprietor he would be liable in damages for all harm suffered by the employe. On the other hand, if the employe refuses to make use of the safety appliances provided for him by his employer he is estopped by his own act from setting up any claim for damages for injuries sustained, and his wife and children are left destitute through his own want of care of himself and consideration for his family.

As a further illustration, if indeed any were needed, of the danger attending the use of unguarded saws, in one factory in Montgomery county, during the past year, one man had a leg broken by neglecting to put on proper feeder on a self-feeding circular saw, and another was struck in the stomach by a piece flying back on a self-feeding saw. There was also much trouble from an edging saw in the same establishment, until the proprietors put on saw-guards.

CHILD LABOR LAW.

Ever since the enactment of the law known as the "Child Labor Law," prohibiting the employment of minors under twelve years of age, and fixing ten hours per day as the maximum length of time a minor under eighteen may be required to labor in any workshop or factory, there has been an active and persistent opposition to the enforcement of its provisions by a few manufacturers. But it is a gratification to know that the opponents of this wise and humane

statute are so limited in number that they can almost, if not quite, be counted on the fingers of one's hand; but they are, as a rule, wealthy, and what they lack in numbers they endeavor to make up in activity. If the law is wrong it should be repealed, or at least its objectionable features eliminated. If it is right it should not be disturbed, unless it be to so amend it that its evident intent shall be so plain as to be beyond cavil.

Is the law wrong? But few establishments in the State object to it. Their grounds of opposition are not that ten hours per day is not as long a time as boys and girls under eighteen years of age should be required to labor, but that a compliance with the provisions of the law would seriously interfere with their business as at present conducted. This, put into plain English, means, if it means anything, that the making of a few dollars more or less by the manufacturer is of more importance than the welfare of the rising generation; that the making of money is the main object of life, even though it be necessary in seeking that end to sacrifice the health and future prospects of all those youth the poverty of whose parents deprives them of the privileges and advantages of the public schools, and compels them to accept employment wherever found, and upon whatever terms tendered. Such a principle is abhorrent to the nature of every man who is not absolutely blinded by avarice. It makes the man subordinate to the dollar. It takes no account of life and its enjoyments, usefulness and possibilities, and destroys all the noble aspirations of which a human being is capable, that the pecuniary interest of one man may be advanced.

It is further claimed by some manufacturers that they employ children under twelve years of age only for the good of the child and the benefit of its parents, and therefore they dislike to discharge them. This argument in favor of the repeal of the law will not have much force with any one who knows the motives that govern business men in their actions; nor will it satisfy those who have some regard for the future intelligence and capacity of those upon whom the State will, in a few years, have to depend for the direction of its affairs and the maintenance and perpetuation of the blessings of civil and religious freedom. The argument is unworthy of serious consideration. The motive that prompts it is so transparent that no one need be deceived.

It is also asserted that boys and girls under eighteen years of age are perfectly satisfied with the rule of employers that requires them to work twelve and thirteen hours per day, and that they have no desire for a change of work hours. This claim is so ridiculously absurd as to excite a smile. To say that youth of that age, or even adults, are satisfied with such hours of labor, is to talk supreme non-

sense. It is contrary to the plain dictates of nature; it deprives them of all opportunity for recreation, for reading, and for amusement. Every man knows from his own experience that it is utterly destitute of even the semblance of truth.

The law is right, and should be allowed to stand. It is a law in the right direction. It is in the interest of humanity and justice, and in accordance with the enlightened sentiment of the times. While the State has upon its statute books a law making eight hours a legal day's work, even for adults, it certainly would be the height of inconsistency to say that a manufacturer shall have the privilege of compelling minors to labor any number of hours his selfishness may dictate. The best interests of the youth of the State, and therefore of the State itself, forbid such a policy. As well turn back the hand of time fifty years, and obliterate from the face of the earth the progress made by the human race in the last half century. All over the world the demand is for a shorter work-day, and in England especially—monarchical England—the legislative power as well as public opinion have recognized the rightfulness of the demand. In almost every northern State of this Union legislation has been had upon this subject, and in some of them to a far greater extent than in Ohio. No State excels and but few equal Ohio in the munificence of her appropriations for the unfortunate insane, blind, deaf and dumb, and other deserving objects of charity. Will she be second to any other in her care of her youth, and in protecting them from the cruelty too often practiced upon them in some of our factories and workshops? It is now too late in the nineteenth century to even think of a retrograde movement in this matter.

The claim that business cannot be successfully carried on unless the employer be allowed to work children more than ten hours a day is one unworthy of any man, and is in direct conflict with well known facts. A business that cannot thrive without such a sacrifice does not deserve to thrive. The sooner it is wiped out the better. It is not legitimate, and should in no way be encouraged. Who will justify the sacrificing of helpless children, depriving them of all opportunity for healthy recreation and innocent amusement, destroying their future prospects by making unthinking and unfeeling machines of them, that some one may thereby thrive and grow fat? Surely, no one who takes any interest in the future of his race, or who desires to have the progress of the past and present—mental, moral and physical—go on unchecked and unimpeded in its humanizing and elevating career, can for a moment countenance such a proposition.

It is to be hoped that the General Assembly will give no heed to

the representations of any party desiring the repeal or essential modification of the "Child Labor Law." It was enacted in response to the demands of the best people of the State, and in the interest of the civilization of the age, and its beneficent features should not be frittered away, and children left a helpless prey to men who worship at no shrine but at that of the almighty dollar. It has so far worked nothing but good, and promises still greater blessings in the future. It is willingly accepted and cordially approved by an overwhelming majority of the manufacturers of the State. It benefits the children and wage-workers generally, and inflicts wrong on no one.

As showing how some of our most enlightened and prosperous manufacturers feel upon this subject, I will state that some of them, notably one large concern in Middletown, Butler county (The P. J. Sorg Co.), not only approve of that provision of the law which prohibits the employment of children under twelve years of age, but think the limit should be extended to fourteen. In fact, these men have voluntarily adopted fourteen years as the limit under which they will employ no one.

DANGERS OF FIRE CAUSED BY STEAM PIPES AND HOT-AIR FLUES.

It is no uncommon thing for the origin of disastrous fires to be charged to incendiarism; and in accepting this as the true cause communities become excited and alarmed, no man knowing when his own property may fall a prey to the lawlessness of the incendiary.

In the case of a very large proportion of these supposed incendiary fires, careful examination by experts has revealed the fact that the fires originated from steam pipes or hot-air flues placed too near the wood-work of the building.

By long exposure to heat, not exceeding 212 degrees, timber is brought into such a condition that it will fire without the application of light.

The time during which this process will go on until it ends in spontaneous combustion is from eight to ten years, so that a fire might occur in a building without the least warning to the occupant.

It has been proven in one instance, after a thorough and careful investigation, that a fire was traced to a stove which was resting on a cast-iron plate one inch thick, this in turn resting on concrete two and a half inches thick, which was supported by wooden joists, the joists under the stove igniting. If this is a cause of fire, then the majority of buildings heated by means of steam, hot water and hot air, are in constant danger of fire from spontaneous combustion, since the general impression prevails that the pipes and flues for heating can with impunity be placed in contact with timber.

In examining this cause of fires, the first question is whether wood will char at as low a temperature as 212 degrees.

In tearing down buildings for the purpose of re-building, the timber in contact with the heating pipes and flues has often been found charred.

Charcoal is made for certain purposes in the arts at 300 degrees. As the result of experiments performed in the laboratory, small pieces of white pine heated a few hours in an air-bath at a temperature of 300 degrees were partially converted into charcoal. Considering these facts, it must be admitted the temperature of 212 degrees is sufficient, if applied for a long time, to convert wood into a partially burned charcoal.

Accepting this as a fact, the next point to consider is the degree of heat at which charcoal will ignite. Made from the same wood at different temperatures, the products ignite accordingly; that is, if made at low heat, it fires from a correspondingly low temperature.

It has been determined experimentally that charcoal for making powder, when made at 500 degrees, would fire spontaneously at 680 degrees, and when wood has been carbonized at 260 degrees, a temperature of 340 degrees only was required for spontaneous ignition. Under certain circumstances, charcoal made at a temperature of 500 degrees even will ignite when heated to 212 degrees.

So far the discussion of heating pipes and flues as a cause of spontaneous fires has been upon the false idea that they are never heated beyond 212 degrees. Under the ordinary pressure of the atmosphere, as when water is heated in the open air it boils at 212 degrees, but if it is heated under pressure the boiling temperature increases accordingly; for instance, water boiling at a temperature of 212 degrees is under a pressure of 147 pounds, equal to a column of water one inch square and about thirty feet high; if the pressure is increased to two atmospheres, the temperature required will increase to 249 degrees, and so on, so that when a steam gauge registers 60 pounds the actual pressure is 75 pounds, and the temperature at which the water is boiling as high as 307 degrees.

The higher the building the greater must be the pressure, and hence the higher the temperature at which the water boils, and it follows that the pipes must heat hot accordingly; and it is stated that in some systems of water heating the pipes have the water started through them at a temperature of 350 degrees.

By the system of low-pressure steam-heating, which is far the most generally used, the pressure is only from 5 to 7 pounds above that of the atmosphere, with a corresponding temperature of 228 to 235 degrees.

Then, where furnaces are used for heating, the temperature in a flue has been found to be 300 degrees at a distance of fifty feet from the fire.

Couple these figures with those given in reference to the heat necessary to produce charcoal and cause its ignition, and it must be admitted that these pipes and flues for heating are responsible for many fires. The application of these facts is as follows: After long exposure, the wood in contact with the heating pipes and flues is changed on the surface to charcoal. During the warm season this charred surface absorbs moisture from the air; then in the fall comes a cold spell and the heat is turned on, when the moisture is driven from the pores of the charcoal, leaving it in a condition to readily absorb gases. The cold abates and the heat is lowered; fresh air in abundance then passes into the confined spaces where the pipes are generally placed, rapid absorption of oxygen from the air by the charcoal follows, with heating and spontaneous firing, as already explained.

The body of the timber is heated, and this heat prevents too rapid cooling of the charred surface when the fresh air passes in, otherwise the charcoal would be placed under circumstances unfavorable to ignition.

The experiment of burning iron filings in the flame of a spirit lamp illustrates the influence of division upon the igniting point. Now, if the iron is in a pulverulent state, as when made by hydrogen, it will, when freshly made, ignite to a red heat when shaken into the air.

Then, if it is true, as stated by an English scientist, that the oxide of iron, if placed in contact with timber and excluded from the air, and aided by a slightly increased temperature, will part with its oxygen and be converted into very finely divided particles of metallic iron. Here is another cause of fires from heating pipes.

For during the summer the pipes rust, and then when heated the rust is reduced, leaving the metallic iron in the same condition as that made by hydrogen; the temperature is lowered, fresh air appears, and oxygen is rapidly taken up by the finely divided iron, each particle heating so rapidly as to give a red heat to the mass.

Considering all the points bearing upon hot water and steam-pipes, also heating-flues, an explanation is found of the great number of fires occurring at the approach of winter, and which are reported as from defective flues, supposed incendiarism, or causes unknown.

Steam-pipes packed in sawdust or shavings to retain the heat while steam is conveyed to a distance have given rise to fires.

One peculiar and important instance is on record of a fire from steam-pipes. In the drying room of a woolen mill a pine board was placed some three or four inches above the steam-pipes to prevent wool from falling upon them. A fire followed, and after being put out a careful examination determined to the satisfaction of all that the heat

of the pipes had distilled the pitch from several knots in the pine board, and this dropping on the pipes had ignited and caused the fire.

The illustration needs no comment, as the lesson is too plain to need pointing out.

THE MINORS' LAW.

The Sixty-seventh General Assembly, at its adjourned session, very wisely amended the law relating to the employment of minors, prescribing the maximum number of hours per day such persons may be required to labor, etc., making it read as follows:

"SEC. 6986aa. No minor under the age of eighteen years shall be employed in any of the places named for a longer period than ten hours a day, and in no case shall the hours of labor exceed sixty in one week; and every employer shall post in a conspicuous place, in every room where such persons are employed, a printed notice, stating the number of hours required of them in each day of the week; the form of such printed notice shall be furnished by the chief inspector of workshops and factories, and shall be approved by the attorney-general; and it shall also be the duty of every employer of minors to keep a record, which shall be open to the inspection of the chief inspector of workshops and factories and of his assistants, giving the name of each minor employed, his or her name, date and place of birth, and also present residence of the parents or guardian."

This law has already accomplished a great deal of good. In every work-place that has been visited by the inspectors during the past year, where minors are employed, the notice provided for has been conspicuously posted. There has been no opposition manifested to the provisions of this law, except in a very few cases. Now and then a manufacturer is found who claims he can work a minor any number of hours per day he pleases, so he does not work him to exceed sixty hours per week. It is also claimed by a manufacturer here and there that the ten hours prescribed by law means ten hours of actual labor, not the length of time a minor may be required to be in attendance in the factory ready for work, and that all the time he is not actively engaged at work can be deducted from the total number of hours he is present. It is not difficult to see what these constructions of the law would soon lead to. As to the first, these minors could be employed and paid by the day, and be required to work fifteen hours a day for four days, making sixty in all, and then be idle and earning nothing the other two days. But the Attorney-General has given a very positive opinion on this point, in which he holds that the law means that no minor shall be required to work more than ten hours in any one day. This opinion is printed on the notices posted in all manufacturing establishments where minors are employed. As to the second point, it is a fact well known to every mechanic or other employe in a workshop or factory, that there are but few branches of business in which active work is continuous the entire

day. There is more or less waiting on account of one cause or another; but no proprietor ever claimed or exercised the right to deduct time thus lost from a journeyman's wages. It is to prevent a minor from being confined in a factory an excessive number of hours that the law was enacted. It does not seem possible that any man of ordinary intelligence could seriously claim for the law such a meaning as this.

I have had, as before said, some trouble with a few men on account of this law, but I hope to be able to enforce it, according to its terms as well as to its spirit, everywhere throughout the State. The class of men who thus quibble as to the true meaning of the law would attempt to evade any statutory provision that had for its object the protection of those youth who are, from whatever cause, compelled to accept employment from manufacturers of this class. But it can be truly said that such men are few and far between, and it is to be hoped, for the sake of humanity, that their kind will be of slow growth. They are not wanted. A man who would confine a child in a workshop or factory twelve and thirteen hours a day is of no benefit to mankind, and his absence is far more desirable than his presence.

As indicating the general drift of sentiment among manufacturers as to the minors' law, Messrs. Knowles, Taylor & Knowles, of East Liverpool, have had printed a card containing the law, and then make the following request of parents and guardians of children in their employ: "To facilitate compliance with the provisions of the law, we will ask you to kindly fill the spaces on this card, giving exact information, and return the same to our office, or to the foreman under whom the said minor is employed, without delay." The following is the information solicited: Name of child; when and where born; present residence. This information is to be signed by the parent or guardian.

DUST AND SHAVING CHUTES.

It is difficult in the extreme, if not wholly impossible, for an inspector to discover, in a large manufacturing establishment, everything that may, under any and all conditions, at some time or other, prove to be dangerous to life or limb. There is such an almost endless variety of machinery and new labor-saving apparatus and appliances in all modern factories, that considerable time and great experience are required to find out all the peculiarities and dangerous character of each different piece. In a very harmless-looking implement or innocent-appearing adjunct of a complete establishment may be found in time a great latent power, which, let loose, will prove as disastrous and as destructive to life and property as would the bursting of a steam-boiler. In some cases, even those instrumentalities that have been introduced, at considerable

expense, for protecting the health and promoting the comfort of the work-people, may prove, if not themselves securely guarded, the most dangerous agencies in the establishment, and be the means of not only inflicting immediate death, but also of communicating fire to the building, and otherwise causing great damage; thus rendering more probable, in fact, the very occurrences to prevent which they were introduced. The dust produced in wood-working factories is not only exceedingly disagreeable, but it is positively injurious to health, and in all well-conducted places of this kind efforts are made to obviate this trouble by getting rid of the dust constantly arising with as little inconvenience and harm to the workmen as possible. To this end various means have been adopted, and large sums of money expended.

During the past year a very serious accident occurred in the factory of the Columbus Buggy Company, one of the most complete and perfectly arranged establishments of the kind in the country. In the wood-working department the company had provided as perfect a dust-arrester as money could procure. It connected all the rooms of this department with a tightly-inclosed brick chute, which reached from the bottom of the building to the upper story. Into this chute the dust and shavings of the different rooms were emptied, whence they descended to the boiler-room, where they were thrown into the furnace. The door of the chute was some ten or twelve feet from the furnace door. During the noon hour the man in charge of the chute very improperly opened the furnace door, preparatory to throwing in the contents of the chute, and then opened the door of the latter, when almost instantaneously an explosion occurred of such tremendous force as to bodily lift the heavy metal roof from the walls and scatter it around in various directions. The walls of the building were seriously damaged, many feet of them being thrown down. The building was also set on fire, which was extinguished, however, without any serious damage therefrom. But the most unfortunate feature of the accident was the wounding of two men, from the effects of which one died; the other finally recovered. The accident occurred shortly after twelve o'clock, when most of the people were out of the building, or, in all probability, the loss of life would have been much greater. In repairing the building, the company has provided the dust-chute with an automatic door, which, it is thought, will render a similar accident in the future well-nigh impossible.

Too much care cannot be taken when dealing with such dangerous agencies as dust-chutes, etc. The chute should be as far from the door of the furnace as circumstances will permit, and especial care should be taken not to allow the door of the chute to be open while arranging the fire in the furnace. Everything should be as tight and snug as possible.

An explosion of this kind is much more terrible in its effects than most people imagine.

The great fire in Cincinnati, October 15, last, by which over fifty buildings were destroyed, and one hundred families rendered homeless, occurred through the carelessness of the man in charge of a dust-chute. This, in connection with the accident at the works of the Columbus Buggy Company, shows how extremely careful every one should be in their management of such dangerous concerns.

On this question of dust explosion, a writer in the *Scientific American* (Mr. M. J. Butler) says that some experiments he made about eight years ago to test this point may be of interest. He says: "I placed shingles in a sash and door factory where a sand-paper machine was working. In a very short time they were coated with dust to the depth of an inch. This dust was so wet that, when squeezed in the hand, water would run out. I then carried the shingles to my office, where a bright fire was burning, and used a small hand-bellows to blow the dust off the shingles, so as to come in direct contact with the flame, and the result was an undoubted explosion of such force as sufficed to blow the mica lights out of their places in the stove. The result of the few tests I made demonstrated this fact, that if a flame is brought into contact with finely disseminated dust, such as is found in flour-mills, sash and door factories, and other works of like nature, an explosion will take place of such violence that no building could withstand it. The factory wherein my experiments were conducted immediately adopted blowers and exhaust-fans for the entire removal of all the dust from the building, and this is the only safe way of dealing with this problem."

THOUGHT AND FACTS—OFFICIAL AND UNOFFICIAL.

Workingmen are respectfully asked, before finding fault with the inspector for not having visited the particular shop in which the fault-finder may be employed, to think of the impossibility of three men getting all over the State of Ohio, even in twelve months, much less visiting every shop and factory just at the precise time some one may desire. With the limited number of inspectors, and their hands partially tied by the meagerness of the appropriation for traveling expenses, it is a physical impossibility to reach all the work-places of the State (over 20,000 in number) in a year, and, of course, while some may be visited early in the year, others cannot be until later in the season. All may rest assured, however, that the inspectors will get around to each just as soon as they can. They are continually on the go, and do not allow grass to grow under their feet, but they are not capable of working miracles.

It sometimes happens that parties having no authority from this office assume the character of inspector, and order changes and improvements on a lavish scale. There need be no trouble in recognizing a regular inspector. He is always armed with sufficient credentials to fully establish his identity and authority. All others should be summarily ejected from the premises. This office is not in need of volunteers.

The Barney Smith Manufacturing Company, of Dayton, have given standing instructions to their millwright to make a thorough investigation of all elevators in their works the first of each month. They have also expressed their desire that an inspector visit and inspect their establishment as often as possible. They wish to avail themselves of all suggestions and all improvements calculated to promote the comfort and safety of their employes. Such a spirit is in striking contrast with the penny-wise-and-pound-foolish course of a few men in the State, who think that every cent spent for the protection of their workmen is so much money thrown away. It is to be hoped that the time is not far distant when all manufacturers will see the advantage it will be to them to keep their works in as good and safe a condition as circumstances will permit. Nothing is ever lost by recognizing the fact that work people have rights, and that the more those rights are respected by the employer the more will he be respected by the employe.

All that has been said above as to the Barney Smith Company can also be said of the Mosler Safe and Lock Company, of Cincinnati. They have also requested frequent inspection, and have expressed the hope that the inspector will not hesitate to make such recommendations as his experience, gained in the daily examination of all kinds of factories, may suggest. It is the desire of the company that everything connected with their establishment shall be in first-class order. Excellence is what they want, cost what it may.

There is frequent trouble in regard to the erection of fire-escapes, owing to the question whether they should be put up by the owner of the fee or by the lessee or tenant. In special cases the law would seem to operate unjustly, whether the owner of the fee or the tenant be required to put them up. There has been but one judicial decision in the State on this point, so far as this office is informed. That was a case arising in Cincinnati, and was decided by the Superior Court of that city. It was held to be the duty of the tenant to provide all necessary fire-escapes. This matter is of sufficient importance to receive such legislation as will, if possible, not only definitely fix the responsibility where it rightfully belongs, but also do it in such manner as to be satisfactory and equitable to all parties. The inspectors encounter considerable trouble in consequence of the conflicting views of owners and tenants.

There may be, and in fact quite frequently is, a number of tenants in the same building, one or more of whom may have no possible use for a fire-escape, and the question naturally arises in such case, whose duty is it to provide proper means of egress from the building in case of fire? In some cases it may be necessary to add to or change the building itself, and this, clearly, is not in the power of the tenant to do. It is to be hoped that the General Assembly will give this important matter the consideration it deserves.

I desire to return my sincere thanks to those publishers who have so generously supplied this office with a copy of their publications free of cost. Their liberality is duly appreciated, the fact as well as the motive which prompted it. I can only hope, as I sincerely do, that those for whose benefit these papers are especially published will show by their acts that they fully understand the importance of giving them the support they deserve.

Trouble is constantly occurring in regard to the speed of emery-wheels, which could easily be avoided. The allowable speed of a wheel depends upon its make. The manufacturer tests his wheels, and knows at what speed they may be run with safety; so that if an establishment using emery-wheels will keep on hand the manufacturer's catalogue there will be no trouble in the inspector determining whether the wheel is running at a greater speed than is justified by entire safety. This will not cost anything, and will save a great deal of trouble. A good many accidents happen from not knowing, or not heeding, the guaranteed speed of a wheel. A manufacturer of an emery-wheel has his reputation at stake, and he will not be likely to catalogue them at a higher speed than the tests he has made fully warrant. Without the catalogue the inspector knows nothing about them, and can not give any reliable directions as to their speed. It is hoped that manufacturers will pay some attention to this very simple request.

SPONTANEOUS COMBUSTION.

A singular occurrence happened recently in an establishment where steel tools are manufactured.

The occurrence deserves special mention in view of the fact that so many manufacturers in the State are much interested in the subject of spontaneous combustion, and are anxious to obtain as much information as possible concerning all phenomena connected therewith.

For some time a sponge had been used for wetting an emery-wheel, bringing water up out of a water-box by capillary attraction, and touching the wheel. It was kept against the wheel lightly by a spring. The wheel was used in grinding very hard steel plates; therefore the

sponge constantly wiped particles of steel off the wheel during its revolution, and it was used in that way until these particles had filled up its cells to a very considerable degree, of course being wet all the time. It was then laid aside, the string being attached to it, together with a little cotton cloth. In time it became entirely dry, lying on and against a couple of pieces of fine wood.

These details are essential to a proper understanding of the singular behavior of the steel-filled sponge.

After lying unobserved for a week or ten days it was suddenly discovered one afternoon to be incandescent—in fact, a living coal—and had set fire both to the board on which it rested and the one against which it leaned. It had burned a considerable portion of the stout twine and the cotton cloth attached to it. All were on fire, and although flames had not burst forth they evidently would have done so in a short time, as the room contained a very pungent smell of burning wood.

The boards were each burned to a depth of one-fourth inch and to a width approximating three inches when the incipient conflagration was quenched.

The appearance of the charred sponge is not much unlike that of a piece of roasted iron-ore, which it differs from very decidedly in weight, being quite light. When broken it exhibited the same characteristics throughout, showing that fine particles of steel had been thoroughly distributed in its interior.

This evident case of spontaneous combustion in an article which had not been saturated with grease or oil, but which consisted of a piece of ordinary sponge, filled with fine particles of steel while it was in a wet state, naturally caused much discussion, but a very plausible explanation of its mysterious behavior has been made by the proprietor of the establishment, which is as follows: The particles of steel which were wiped off the emery-wheel by the sponge must necessarily have been exceedingly fine, as the steel was very hard. Lodging on the sponge in a wet condition, and in constant contact with water, oxidation was active—or, in other words, the particles rusted very rapidly. The fine particles of steel presented an extremely great surface area for such action as compared with their bulk.

Under ordinary circumstances, oxidation does not develop sensible heat, but under the peculiar conditions here realized, the usually harmless chemical phenomenon of rusting developed into an actual fire-creating agent, and incandescence resulted.

Here was an article which at first sight would seem to be as incapable of spontaneous combustion as an ordinary brick, but which

proves to be entitled to rank with greasy rags and oily waste, and other well-established fire-creating combinations.

Had not this burning mass been discovered most auspiciously a serious conflagration would, in all probability, have ensued, and its cause would have been "unknown."

Yet, in spite of the occurrence, I am not fully prepared to classify steel grindings, filings or chips among inflammable material.

IMPROVEMENTS IN WORKSHOPS AND FACTORIES.

It is a pleasure to note the improvements that are being made in the character of the workshops of the State. It is an evidence that the manufacturers are beginning to realize the fact that true economy consists in making these places as complete in all respects as they can, and guarding, as far as possible, against accidents. Many new structures of this kind have been erected during the past year in different parts of the State that are not excelled anywhere in the country. All modern improvements adapted to the special business carried on have been introduced, not only with a view to economy in conducting the business, but also for the purpose of protecting the employes from harm of whatever kind. Among these fine structures Columbus can boast of some as elegant and complete in all their appointments as can be found in any part of the world. Elsewhere in this report special mention is made of some unusually fine shops, and of the efforts made by the proprietors to make them in all respects model concerns; and it is nothing more than right that the shops of the Kilbourne & Jacobs Manufacturing Company, Columbus, should be mentioned. They are a fair illustration of the superiority of the modern over the old style of workshops. These shops (when all shall have been completed) are 12 in number, covering 10 acres of ground, and are each one story in height. They are located on the line of the Cleveland, Columbus, Cincinnati and Indianapolis Railroad, just northeast of the Union depot. The dimensions of these model shops are as follows: Truck setting-up shop, 60 by 200 feet; main setting-up shop, 75 by 200; wood shop, 45 by 200; casting and machine shop, 45 by 200; blacksmith shop, 75 by 150; shear punch-room, 75 by 122; sink-room, 45 by 100; besides a proposed stamp-room, 95 by 128, and a storage-house, 45 by 315. There are also separate buildings for steam hammers and furnaces, boiler-room, buggy shed and paint-shop. Also, an elegantly arranged and fitted up business office.

This company employed, during the past year, as many as 430 people, 25 of this number being under 18 years of age. The shops are

first-class in every particular, and neither pains nor money were spared to make them such. Every suggestion made by this department has been cheerfully and immediately complied with. The company believe that as they treat their employes so will their employes treat them. Consequently, everything that can be made to conduce, in any manner, to the comfort and safety of the workmen is to be found in these shops. As would naturally be expected under such circumstances, their trade is enormous, reaching to all parts of the world.

As the legitimate fruit of the interest taken in the welfare of their employes, this company have never had the least trouble with their men, either as to wages or anything else, illustrating the truth of what has so often been said, that the surest way to make work-people contented, and to avoid strikes, and to make money and be happy, is to treat a workingman as though he were a human being, possessing precisely the same rights, political, religious and social, as are claimed and exercised by his employer. And such are the principles recognized and practiced by the Kilbbourne & Jacobs Manufacturing Company of Columbus.

DANGERS OF FIRE ARISING FROM FAULTY CHIMNEY CONSTRUCTION.

In the erection of buildings, very often, little or no attention is paid to the placing of wooden beams or trimmers near the brick-work of a chimney, and many fires have occurred through this carelessness of the architect or builder.

The placing of wooden beams or trimmers snug against the brick-work is entirely wrong, and should by all means be avoided, for by so doing cracks are frequently opened in the chimney, owing to the after settling of the part below the floor. Another objection is that the wood, being in close contact with the bricks, is liable to become charred by the heat of the flue, and eventually ignite either by spontaneous combustion or by sparks from the chimney itself.

In an instance that recently happened at a fire that occurred in a building at New York, the origin was apparently the very one I have mentioned under the heading of "Dangers of Fire Caused by Steam Pipes and Hot-Air Flues," in another part of this report.

The fire started in one of the upper floors, and burnt out the top of the building. No cause was assigned at the time, but on investigation of the floor in which it started the fire-marshal soon discovered the spot where, in his opinion, the flames had started.

The chimney was near the rear of the building, and at one side, and

where it went through the floor a trimmer, some 6 or 8 inches square, was close up against the brick-work.

When the fire was extinguished it was noticed that while all the floor beams and woodwork were only charred to the depth of one inch or so, this trimmer was burnt nearly through, and what remained appeared to be a solid mass of charcoal, which was almost certain evidence that the fire had commenced there. In fact, the fire-marshal gave it as his opinion that the fire had, probably, been smoldering for a long time before it finally broke out. As the only source of fire or heat was the chimney against which the trimmer was placed, there can be little doubt but that the wood had been gradually charring, and had eventually caught fire from this cause.

As the chimney behind the trimmer was not exposed to view it could not be determined whether the final ignition arose from spontaneous combustion or from sparks issuing through cracks in the brick-work.

Evidence of the kind here noted is far more convincing than any amount of argument on the subject.

LEAD-POISONING.

The unhealthfulness of white-lead establishments is so well known that nothing need be said here to prove that fact. Lead-poisoning is so common among workmen in such places as scarcely to excite comment. Yet this necessary industry need not be so injurious to health as it usually proves to be. It can, to a great extent at least, be stripped of its power to undermine health by the exercise of a little care and common sense by those employed in such establishments. Cleanliness is one of man's greatest virtues, as well as one of his most steadfast friends. Pay due attention to the cleansing of the hands, the face, the body and the clothing, and most of the terrors of lead-poisoning will thereby be destroyed. It is no uncommon thing to see men engaged in this industry, in utter disregard of the simplest and plainest sanitary laws, eating, between meal hours, with their hands besmeared with lead. Is it any wonder that, under such circumstances, with such disregard of the poisonous character of lead, so many men are afflicted with lead-poisoning? It is, on the contrary, strange that so many escape. Proper care of themselves—the care that even animal instinct alone would suggest—would save the health and prolong the lives of many workmen in these factories that now fall a prey to the poisonous effects of the material they are constantly handling.

This office has always recommended that all sifting and crushing apparatus be made as tight as possible, so as to prevent the escape of

dust, and that by all means the rooms be well ventilated. Meals should never be allowed to be eaten in the work-rooms, nor should the dinner-buckets or baskets be kept therein. Workmen should be changed from one department to another as often as possible. The clothing should be changed after work hours, if the circumstances of the party will permit. In a word, all persons whose business brings them into lead establishments should pay the strictest attention to that great law of nature, cleanliness. It is a powerful foe to all kinds of disease, and does not cost near so much as a doctor.

To counteract the effects of lead-poisoning upon the human system, physicians generally recommend the use of fatty food. They also claim that milk is a perfect prophylactic, and should be taken in large quantities. The teeth should be well brushed before eating, and when work is over. The mouth should also be rinsed with a weak solution of sulphuric acid.

ACCIDENTS SHOULD BE REPORTED.

In my last annual report I suggested the propriety of the Legislature passing a law requiring all manufacturers to report to the chief inspector all accidents happening in their factories, giving all particulars in connection therewith, such as the business carried on, age and sex of the party injured, how long employed in the establishment, at what particular work at time of accident, nature of injury, etc., etc. The importance of information of this character cannot well be overestimated. It would be invaluable to the legislator, as well as of the greatest assistance to the chief inspector. It would show where accidents are the most likely to happen, the dangerous character of one business as compared with another, and would especially direct the attention of the inspector to that class of workshops and factories, and to that particular department of each, most needing his investigation. It would also have a very beneficial effect in causing manufacturers to give more attention to the condition of their machinery, the means of egress in case of fire, the proper ventilation of the building, etc.; for no man desires to have his place of business published throughout the State as being unhealthy and dangerous, and as being the cause of the death or mutilation of more or less of his employes. It would be an object to them to show as few accidents in their works as the facts would warrant.

Massachusetts has a law on this subject which, while not being as complete as might be desired, is in the right direction, and is very suggestive of what should be required of manufacturers in this respect. This law provides that all "manufacturers and manufacturing corporations shall forthwith send to the chief of the Massachusetts district

police a written notice of any accident to an employe while at work in any factory or manufacturing establishment operated by them whenever the accident results in the death of said employe, or causes bodily injury of such a nature as to prevent the person injured from returning to his work within four days after the occurrence of the accident;" and provides for a fine not exceeding twenty dollars for any violation of the provisions of the act. It also provides that the "chief of the Massachusetts district police shall keep a record of all accidents so reported to him, together with a statement of the name of the person so injured, the city or town where the accident occurred, and the cause thereof, and shall include an abstract of said record in his annual report."

That a similar law in this State, somewhat more comprehensive in its provisions, would accomplish much good, there cannot be any doubt. It is to be hoped the General Assembly will give this matter the consideration its importance deserves.

NATIONAL CONVENTION OF FACTORY INSPECTORS—TRAVELING EXPENSES.

The factory inspectors of the different States met in convention at Philadelphia on the 8th of June last. This meeting, it is not improper here to say, was the result, mainly, of the efforts made to that end by the chief inspector of Ohio. It is believed that great good to all will flow from meetings of this character. The proceedings of this first convention will be found elsewhere in this report. One fact deserving attention was learned, namely, that while Ohio is the third State in the Union in population, and takes rank near the head of the list as to wealth and the extent and diversity of her manufactures, she is almost the lowest as to the amount she expends for the inspection of the shops and factories where so much of her wealth is created. Her voters in large numbers come from these human hives of industry. Is it not better that they should come hence sound of body and mind, and capable of intelligently discharging their duties as citizens and voters, as well as properly providing for their families, than as cripples and mental dwarfs, looking forward to the public alms-house as their final earthly home? While Massachusetts expends annually for factory inspection not less than \$38,000, the most the populous and rich State of Ohio has as yet expended in one year for that purpose foots up only \$8,000. The usefulness of the assistant inspectors has been materially crippled by the meagerness of the appropriations for their traveling expenses. Can any one imagine how eighty-eight counties are to be visited and all their workshops examined in one year by three men at an expense for railroad fare, hotel bills, etc., of fifteen hundred dollars? It is out of the question. It cannot be done. It is, therefore, confidently

hoped that the General Assembly will be more liberal hereafter, and appropriate a sufficient sum to enable the inspectors to perform the work expected of them by the State and by the public. The sum appropriated for the traveling expenses of the chief inspector last year was also much too small. He has to go to all parts of the State, and a very large portion of his time is necessarily spent in traveling. Every man who has had any experience in traveling knows that six hundred dollars will not go far in paying the railroad fare and hotel bills of one who is on the road one-half his time.

HOW INSPECTION IS RECEIVED BY THE PEOPLE.

It is gratifying to know that the work of this department is highly appreciated by the leading manufacturers of the State. This is encouraging to those engaged in the work of shop inspection, not merely as an indication that their labors meet with the approval of those who might be supposed to regard with some suspicion any examination of their premises by an officer of the State, but mainly because it clearly shows that our manufacturers earnestly desire that everything be done that can be to improve the condition of the working man, to make him as comfortable as possible, and to render his daily labor as agreeable and as free from danger of every kind as the wisdom of a humane State can. Almost every day letters are received from leading firms and individuals throughout the State, congratulating the chief inspector and his assistants upon the efficiency of their work, and expressing the hope that the Legislature will give us all the pecuniary aid necessary to enable us to prosecute our work in such manner that at no distant day an unsafe workshop, or an unfit place for human beings to work in, shall be unknown within the borders of our state. This approval of the work of the inspectors is also the highest indorsement that could be given of the wisdom of the law and of the General Assembly that enacted it. Workmen also testify in the strongest terms to the good results that have followed inspection. Of course, there are many concerns that have not as yet received that attention from the inspectors that they should, and in due time will, but common sense men fully understand the fact that, in a State like Ohio, and with the limited means within the control of the chief inspector, time is required to accomplish such a herculean task as that which confronted him when he assumed the duties of his present position.

The chief inspector takes this occasion to say to the shop and factory laborers of the State that, while a few of them have manifested unnecessary impatience—caused, no doubt by thoughtlessness—they have duly appreciated his position and his efforts in their behalf, and takes

pleasure in acknowledging the invaluable assistance they have been to him in directing his attention to places needing immediate examination.

Altogether, the indorsements the law and its administration have received from all classes of people are of the most gratifying character.

TOO MUCH CARE NO CARE AT ALL.

It is somewhat annoying to the inspectors to have a proprietor, in his anxiety to comply with the suggestions and recommendations he has received from them, to so far exceed what he was requested to do as to bring his outlay of money and his painstaking to naught. The sole object of inspection is to protect life and health. Our efforts in this direction are not in behalf of any particular person or class of persons. We desire to make the workshop comfortable and healthy to the parties therein employed, and to place such guards around otherwise dangerous machinery as will render it comparatively harmless, not alone to the casual looker-on or transient curiosity-seeker, but to all those whose duty it is to be in constant contact with the various implements of a manufacturing establishment, as well as to all others, from whatever cause or motive they may be present. This purpose of the inspectors seems to be misunderstood by some manufacturers, and they think that if they have succeeded in so guarding a piece of machinery that it cannot inflict harm on any one having no special business in its immediate vicinity, they have done all that was required of them. This is a mistake, and sometimes a very grievous one. While all persons having no special connection with an engine, for instance, may be securely protected from harm, the engineer may not be protected at all. This frequently happens. Often, when an inspector has ordered the fly-wheel of an engine to be fenced in, the engineer or proprietor has had the entire engine inclosed. This is wrong, and altogether unnecessary. While it will, undoubtedly, prevent every one having no business with the engine from getting too near it, it is no protection whatever to the engineer. It is designed by guarding the fly-wheel to protect the engineer from being caught while oiling his eccentric, which is located, in many instances, between the fly-wheel and the bed-plate of the engine, in which case the engineer has very little spare room. Serious accidents frequently occur to the engineer that could be avoided by fencing in the fly-wheel.

CRUDE ROCK-OIL FOR KEEPING STEAM-BOILERS CLEAN.

Crude rock-oil, properly used, will keep a boiler perfectly clean. With any kind of water within reasonable fitness for use, it will keep

it in excellent condition, and free from scale or moving sediment; but the crude rock-oil will not do all this, unless the proper amount of blowing-off be done, for it will not compass the neglect of attendants.

The proper way to use the crude rock-oil is to send it into the boiler through the feed water, only once a day, and only in very small quantities. One-half an ounce per day will keep an ordinary tubular boiler of fifty horse-power as clean as desirable; and after a few months of regular use the shell will be found as smooth as a piece of japanned work, provided it was not pitted at the start, and the tubes will be perfectly clean and smooth.

The crude rock-oil must be introduced into hot water, and for some reason it does its work better under pressure.

If any constant feeding of the crude rock-oil into a boiler takes place, the fire-seams will commence to leak, for this has been tried time and again. There seems to be a call for only a small amount of the crude rock-oil, and the small amount must not be exceeded.

Engineers who have used this crude rock-oil for four to six years have in some cases experimented with the amount, and in every case an excess of the crude rock-oil caused a leaking at the seams, while a small amount produced the most complete cleanliness and immunity from scale.

The consumption of coal is much less by the use of a clean boiler than it is with a scaly one.

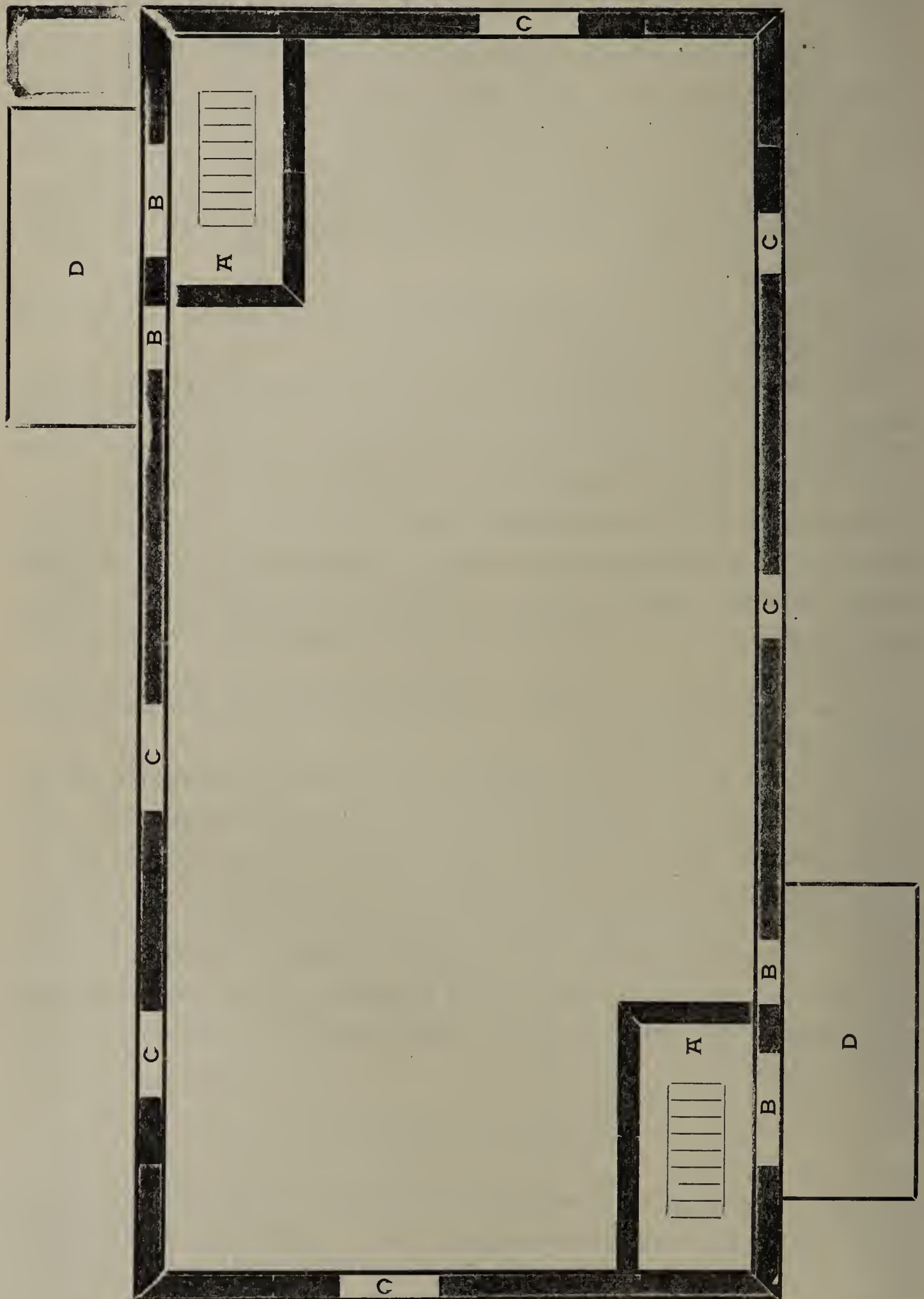
Crude rock-oil can be used in any boiler to advantage on the same principle as exemplified in the housewife's dinner-pot. The oil or grease coats the surface of cast or wrought iron, and the pot becomes smoother than those not used for boiling greasy meats; but the steam-boiler, under pressure, and at a very much higher temperature, with a small amount of crude rock-oil in motion through the circulation, becomes glazed, and being kept so by the minute particles of the crude rock-oil deposited, offers no chance for scale to lay hold, or to maintain a hold if one be acquired.

SLIPPING OF LEATHER BELTS.

The slipping of belts is a great annoyance, not always remedied by tightening. In many instances the belts are so shortened as to spring the shaft without preventing the slipping. This is all wrong, and even dangerous, and should be avoided.

The radical remedy is to keep the belt pliable, so as to hug the faces of the pulleys; but this is not always feasible.

PLAN OF FIRE-ESCAPE.



A. Shaft and Stairway. B. Doors. C. Windows. D. Balcony.

The belt may be softened by neat's-foot oil or by castor-oil. A siccative oil, like linseed-oil, is unfit for a leather belt, as it has an affinity for the oxygen of the atmosphere and reverts to its acid base, which is injurious to the leather.

When a ready remedy is demanded for a slipping belt, the powder known as "whiting," sprinkled sparingly on the inside of the belt, is least harmful of any similar application.

Powdered resin is bad, as it soon dries the leather and cracks the belt, while it is difficult to get it out of the leather; whereas "whiting" may be wiped off or washed out with water. The use of water on belts, preliminary to oiling, is good. The belt should be washed on shutting down at night, after the close of work, and then the oil applied when the belt is partially dry. Never oil or wash a belt while stretched on the pulleys.

If iron-faced pulleys were always lagged with leather, there would be little complaint of the slipping of belts. But often this slipping is due to too much strain on the belt.

There is economy in running wide belts, wider than is the usual practice. Many a three-inch belt has to do duty for a four-inch belt, to the annoyance of the operator and the ruin of the belt.

This is false economy, and therefore should be avoided.

FIRE-ESCAPES.

Much has been said in former reports from this office on the subject of fire-escapes, and it is gratifying to know that during the past year not a single life has been lost by fire resulting from an insufficient means of egress, at least so far as has come to the knowledge of this office. But this should not check further improvements and legislation in this direction. A plan of escape is hereby submitted on adjoining page which is, in my opinion, the best one that has as yet been presented to the public. A shaft, as shown by letter A, should be built of brick, from the bottom to the top of the building, and there should be no communication with this shaft from the inside of the building. A balcony, as shown by letter D, should be placed on each story on the outside. This would be an ornament to the building, instead of disfiguring it, as fire-ladders do. A door, as shown by letter B, leads from each floor on to the balcony, and another in the shaft outside of the building leads to the stairway. In case of fire not a particle of smoke could get into the stairway, and escape would be easy, even if the entire building should be on fire, on account of having all communication with the stairway on the outside. This escape evidently obviates a serious objection to all

others, namely, the fear people have of descending them, especially from very high buildings.

CLERICAL EXPENSES.

The amount of clerical work in this office is necessarily increasing year by year, and the chief inspector can no more think of doing it himself than he can think of flying without wings. Last year the sum of eight hundred dollars was appropriated for this purpose, which is but little over one-half the amount received by each one of the clerks in the other departments of the State government; yet it is questionable whether the amount of work performed by the clerk in this office is exceeded by that of any other in the capitol. It is, therefore, suggested that no good reason exists why he should work for so much less than is willingly paid to others, and that the Legislature should, accordingly, appropriate such an amount for clerk hire in this office as will enable the chief inspector to pay his clerk a salary commensurate with his services. The clerkship in this office is not by any means a sinecure. Good penmanship and an ability to copy are not the only qualifications required of him. In fact, they are the least. The chief inspector is away a large portion of the time, and a man is needed in the office who is skilled in mechanism, and well posted in the wants of workshops and factories. He must possess sufficient educational and literary ability to attend to the correspondence in the inspector's absence, and to pass judgment on matters of the utmost importance, requiring varied qualifications. It is but seldom that such a man can be procured for such compensation as the State has heretofore allowed.

HOW TO CAST A BOX ON A SHAFT.

To cast a box on a shaft or mandrel, warm the shaft (also the box, if practicable), take a piece of ordinary writing paper and cut to the length of the box, and wide enough to just reach around; oil your paper well, and wrap around shaft, and have lap come on side where the box will come apart; then wind the paper with a piece of common wrapping twine, in the form of a screw, say on a box six inches long, about ten times; fasten the ends by tucking them under another coil. Then put on cap, and pour as in other methods. When the babitt is cool and the shaft taken out, you will find a good box. The twine has made a spiral groove in the box, running from end to end, thereby giving the oil a chance to pass through the box. The same method also applies to loose pulleys.

WORK OF THE YEAR.

During the past year there were visited and inspected 3,581 shops and factories, being an increase of 474 over the previous year. In 1,235 of these changes were ordered, including changes of various kinds in machinery, fire-escapes, elevators, improvement in ventilation, securing dangerous buildings, etc. In 1,572 notices of the number of hours of labor that may be required of minors under 18 years of age were posted, as directed by act of the last session of the Legislature amending the child labor law. The following statement shows the work by districts:

FIRST DISTRICT.

Number of establishments inspected.....	1,524
Number in which changes were ordered.....	503
Number employing minors, and in which notices were posted.....	525

SECOND DISTRICT.

Number of establishments inspected.....	720
Number in which changes were ordered	121
Number employing minors, and in which notices were posted.....	211

THIRD DISTRICT.

Number of establishments inspected.....	1,337
Number in which changes were ordered.....	611
Number employing minors, and in which notices were posted.....	836

It is but proper to repeat here what was said in my last report, that owing to the fact that the second district contains fewer shops and factories than either of the others, the inspector of that district visited a number of places outside of his district—16 counties in the first, and 2 counties in the third.

REPORTS OF DISTRICT INSPECTORS.

FIRST DISTRICT.

AKRON, November 15, 1887.

HON. HENRY DORN, *Chief Inspector of Workshops and Factories*—

SIR: In looking back over the past year, it gives me pleasure to acknowledge the courteous treatment I have received from the manufacturers of the first inspection district, and to testify to the promptness with which they have, with but few exceptions, complied with my recommendations.

I have had comparatively little trouble in enforcing the provisions of the child labor law. Most of the violations that have occurred have been evasions of the ten-hour limit for a day's work. As a general thing, however, I believe the law is being honestly observed by the employers of minors. In conversation recently with the superintendent of a large rolling-mill, that gentleman stated to me that he hoped the day is not far distant when we shall have a practicable compulsory school law in connection with our present child labor law, and that it should be the duty of the inspector of factories to see that it is enforced. The amendment to the law requiring employers to keep a record of the age, etc., of minors in their employ has worked well. About the only trouble of any consequence in connection with this amendment arises from the fact that, in some cases, parents and guardians are apt to place the age of the child at twelve years and over, when such is not the fact. In such cases I think the inspectors should have authority to examine the parties under oath, if they entertain any doubt as to the truth of the original statement.

There has been much improvement in the character of the machinery as to safety throughout my district. There appears to be substantially a universal willingness on the part of manufacturers to do everything within the bounds of reason to protect their workmen, and though there may be a few places that are not what they should be, there are none in as bad a condition as some impracticables represent them. While a few men may be slow in making the improvements they should, there are also some employes who seem determined not to be satisfied with anything short of the impossible.

I have given special attention to elevators, and done much, I believe, toward making them secure. By applying tests to cables, I have succeeded in showing the insecurity of quite a number, and by so doing have prevented serious accidents.

Perhaps the most difficult matter the inspector has to deal with is that of ventilation. While there is nothing so essential to health, it is extremely difficult to impress its importance upon either the employer or the employe. Habit has much to do with this feeling of indifference. Men who have been accustomed for years to a high temperature in their work-places, and being for the time physically comfortable, do not realize that the want of fresh air is fast undermining their constitutions. It is also difficult in many cases to get proper ventilation, owing to the want of necessary sewerage. In many manufacturing towns there is no system of sewerage at all, and consequently adequate ventilation cannot well be had. But gradual improvement is going on in this matter, and something is being done almost every day for bettering the condition of the working classes.

That the inspection laws have been of immense benefit to the work-people of the State there cannot be any doubt. Almost daily, facts are met with that clearly illustrate the truth of this statement. Factories that a year ago were in a most wretched condition are to-day as good as any in the State, and which it would be difficult now to improve; and as the manufacturers become better acquainted with the law and its objects, and come to understand that it benefits them as well as their

employes, this improvement will be accelerated, and it will go on until our workshops become what they should be, namely, safe, comfortable and healthy.

Respectfully yours,

WM. Z. McDONALD,

Inspector First District.

SECOND DISTRICT.

COLUMBUS, *November 15, 1887.*

HON. HENRY DORN, *Chief Inspector of Workshops and Factories—*

SIR: The life of a shop inspector is a variegated one. He must be a philosopher in fact, though he may not know it. He must, to some extent at least, "be all things to all men," if he desires to be successful in his calling. To know whether a piece of machinery is dangerous, or whether one or more fire-escapes are needed to insure the safety of the employes, or whether an elevator is what it should be, or whether the premises are properly ventilated, or whether the building is liable to tumble down at a time when least expected, requires more or less knowledge of mechanism, hygiene, architecture, etc.; but when the inspector has mastered (or thinks he has) all these intricate subjects he has but just entered upon the threshold of his trials and tribulations. No two men can be found who are just alike in all things, and it is even doubtful if there are any two who are alike in any one thing. All men have to be pleased, more or less, and, of course, the less a man knows the harder it is to please him. Different men have to be approached in different ways. Some have to be attacked by regular approaches; others have to be carried by storm, as it were. Every man has a hobby of some sort, and if the inspector can only ascertain what that hobby is, the battle is more than half won. To attack a man's hobby, whether that man be a manufacturer or a laborer, is as dangerous as would be an attempt to butt a locomotive off the track. There are men who are firmly persuaded that that which has not happened in the past cannot possibly happen in the future. A building may be ready to fall at any moment, but as it never has fallen, there is no danger that it ever will. A boiler may be in the last stages of decay and rottenness, and apparently about to fall to pieces, but, in the opinion of the owner, it is perfectly safe, "for," he says, "I have used that boiler for the last twenty years, and it never exploded in all that time; therefore, I cannot see any use in going to the expense of putting in a new one." But these men are easily enough managed if one only gets the right "starter." They have to be flattered, and made to believe that their superior knowledge is well known and highly appreciated, and that no one thinks of questioning their judgment. If the inspector can only succeed in getting on their soft side he will have no trouble in inducing them to do anything he may want.

Aside from a few differences of opinion—differences reasonably to be expected—and the unpleasantness inseparable from the business of inspection, my intercourse with the manufacturers and workmen of the second district, and parts of the first and third, have been agreeable. Manufacturers generally have manifested a commendable disposition to do what was right, and workmen, as a rule, have not been extravagant in their demands. However much a few men may doubt the fact, there is a wonderful similarity in the nature of an employer and that of an employe. The former is not necessarily a robber, nor are all of the latter anarchists. They mutually recognize each other as good citizens, endeavoring to do the best they can for themselves without infringing upon the right of others to do the same. My recommendations have almost uniformly been complied with without any attempt at evasion, and in most cases not only cheerfully, but with thanks for having made the suggestion. One thing occurs to me in this connection which I deem of sufficient significance to state. In my travels through my district I have come

across a number of manufacturers who have lately moved into the State. In most cases they came from States that have no inspection laws, and consequently our system was new to them; but instead of manifesting any opposition to having their places inspected, they were highly pleased with the law in all its parts, and thought Ohio had adopted the right policy in this respect. Especially were they pleased with the child labor law.

It is my opinion, based upon my year's experience, that it will be but a short time until the manufacturers will be the strongest friends of the inspection laws. They are fast learning that, in being required to protect from unnecessary harm their employes, they themselves are the greatest beneficiaries. Inspection is fast teaching them that great improvements are being made in all kinds of machinery, and in all the appurtenances and appliances of a first-class manufacturing establishment, improvements not only in the interest of the workmen, but in that of the employer as well. They see that to succeed in their business it is necessary to keep step to this universal spirit of progress. Everything moves. To become stationary is to perish.

Very respectfully,

JOHN H. ELLIS,

Inspector Second District.

THIRD DISTRICT.

CINCINNATI, November 15, 1887.

HON. HENRY DORN, *Chief Inspector of Workshops and Factories*—

SIR: In compliance with your request, I respectfully submit a few of the most urgent points coming within my observation while in the performance of the duties of assistant inspector for the third district during the past year.

The most important matter needing the attention of the inspector, especially in Cincinnati, is the necessary means of exit from a building in case of fire or other disaster. While many establishments have been provided with fair means of escape, there are yet some where the means for this purpose are insufficient. These are mostly buildings that are in litigation, and are occupied by small manufacturers, who, in some cases, remove when notified to provide proper means of egress. This, of course, leaves the building or rooms to be occupied by new tenants, and it becomes necessary to again inspect the place, and to again notify the occupants of the necessity of additional means of escape. In buildings of this kind, rather than make the necessary improvements, the parties seek new quarters. It seems to me that to have these buildings provided with the necessary means of egress it should devolve upon the owner or party having charge of the property to make the required improvement.

Elevators, although of the greatest convenience as well as necessity, are frequently the greatest accident-producing machines in use. It matters not who the party is, whether a well-to-do proprietor or a humble employe, if the elevator is not properly protected, all are equally liable to serious and perhaps fatal accident. I have endeavored to have all adequately guarded. Some have had automatic guards placed on the openings, and as long as these are in good condition they answer every purpose, but when they get out of order they are of no use unless promptly repaired. Some manufacturers of elevators are increasing their speed to such an extent as to make the acting of automatic guards almost impracticable, and consequently increasing the danger to those who have to run or be around them.

There are some places requiring better ventilation. These are mostly buildings having a sky-light passing through each floor, thus allowing all bad air and

gases to accumulate in the upper story. This accumulation of foul air and gases makes the upper story, when used as a work-room, more or less unhealthy. This occurs mostly in winter, when the windows are kept closed. In shops of this kind roof-ventilation is thought to be the most desirable.

In manufactories of fibrous material, where a great deal of dust is generated, bending and other wood-works, where there is a great deal of steam, and other places creating dust or gases, it has usually been found necessary to recommend the use of exhaust fans. In some business the exhaust fans will not do. It then becomes necessary to exercise the best judgment as to what may be the best. In such cases the business and surroundings have to be taken into consideration.

I have often been informed that many accidents resulting from machinery would not have occurred had the injured parties used ordinary care. Certainly, if every person should use the care that he learns through an accident to be necessary to avoid it, we should not be likely to hear of an accident, unless it happened from the breakage of some part of some machine that no one could foresee. Then, again, if every party putting up a machine, belting, pulleys, shafting, vats, pans, etc., in any place where there is a possibility of an accident, should use the same precaution and care to have all parts and places where accidents may occur securely put up and safely guarded, they would be doing their part towards reducing the chances for accidents, and thus allowing the parties operating the machines to confine their attention more closely to their work, without the danger of being attracted, perhaps at a critical moment, to another point to avoid an accident.

It would be foolish to think that all accidents can be avoided. That the cause for a great many have been removed, and are still being removed by persons operating establishments properly guarding exposed parts of machinery and complying with the recommendations of the inspector, there can be no doubt.

I am pleased to state that, with the exception of one superintendent, I have, in the performance of my duties as inspector, received gentlemanly and courteous treatment from all persons I have come in contact with, and have at all times endeavored to treat them in the same manner.

In conclusion, allow me to extend to you my thanks for your courteous and gentlemanly treatment, and for the many kind acts you have rendered me, for your willingness at all times to give such instructions as might assist me in the performance of my duties, and for your readiness to render personal assistance in cases of a very complicated and difficult nature.

Yours, respectfully,

HENRY C. TRAPHAGEN,

Inspector of Third District.

DETAILED DISTRICT REPORTS.

FIRST DISTRICT.
ASHLAND COUNTY.

ASHLAND.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
Shearer, Kagey & Co.....	Doors, sash, etc	16	.....	.....	.....	.....	.....
F. E. Myers & Bro	Pumps	65	.....	.....	.....	.....	.....
Ashland Times	Printing	5	.....	.....	.....	.....	.....
Kauffman & Beer.....	Woven wire mattresses	20	.....	.....	.....	.....	.....
H. K. Myers & Co	Flour, etc.....	6	.....	.....	.....	.....	.....
Klugston & Hughes.....	Grain elevator	2	.....	.....	.....	.....	.....

ASHTABULA COUNTY.

GENEVA.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
Eagle Lock Co.....	Locks	Idle.	.....	.....	.....	.....	.....
Enterprise Manufacturing Co	Hardware	30	.....	.....	.....	.....	.....
Castle Bros.....	Carpet-sweepers	6	3	.....	.....	.....	.....
G. G. Waters	Spring beds.....	2	.....	.....	.....	.....	.....
Geo. H. Dickinson	Nickel-plating	2	.....	.....	.....	.....	.....

Geneva Tool Co	Agricultural implements	75	.....	.....	Machinery; elevator.....	.....
C. W. Anderson & Son.....	Flour, etc	5	.....	.....	Elevator ....	.....
Goodrich, Cool & Co	Planing-mill.....	23	.....	.....	Machinery .....	.....
Geneva Skewer Co	Butchers' skewers	11	15	5	Minors; machinery . .	Complied...

4

NORTH KINGSVILLE.

O. L. Palmer & Son	Faucets	7	.....	2	Minors.....	Complied ..
Ohio Wooden Pump Co	Pumps	5	.....	.....	.....	.....
Kingsville Handle Co	Baskets	50	10	25	Minors.....	Complied ..
Samuel Sherman	Flour, etc	3
C. T. McGown	Flour and saw-mill.....	4

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JEFFERSON.

Jefferson Tannery	Tannery	2
S. R. Fetch.....	Machine work.....	3
C. N. Boyce	Planing-mill.....	4	Machinery
A. H. Bailey.....	"	4	.....	.....	" .....	.....
R. S. Sheldon.....	"	3	.....	.....	" .....	.....
D. C. Phelps.....	Screen doors, etc.....	2	.....	.....	" .....	.....
E. E. Jones.....	Flour, etc.....	4	.....	.....	" .....	.....

BELMONT COUNTY.

BARNESVILLE.

Chas. Kugler	Doors, sash, etc.....	7	.....	.....	.....	.....
Heed Bros.....	Cigars.. ..	55	25	10	Minors	Complied ..
Heizer & Colpitts	Printing, etc.....	3	.....	1	"	Complied ..
Hanlon Bros. & Co.....	"	10	4	3	"	Complied ..
Hague & Thomas	Doors, sash, etc.....	6	.....	.....	.....	.....
Chas. H. Little.....	Carriages, etc.....	6	.....	.....	.....	.....
U. Damsel & Son	Cigars.....	5	2	2	Minors	Complied ..
Barnesville Glass Co	Window glass.....	125	.....	6	"	Complied ..
Watt Mining Car Wheel Co	Car wheels	40	.....	2	"	Complied ..
S. C. Hilles & Bro	Flour, etc.....	5	.....	.....	Machinery	Complied.
Frame Bros.....	Machine shop	5	.....	.....	" .....	.....
T. & A. Rodgers.....	Doors, sash, etc.....	7	.....	.....	" .....	Complied.
Geo. Atkinson	Woolen mill	3	10	.....	Seats for females; machin'ry	.....
John Wisener	Flour, etc.....	4	.....	.....	Machinery .....	.....
John F. Bulger	Cigars.....	5	1	2	Minors	Complied ..
Barnesville Enterprise	Newspaper	5	4	1	"	Complied ..
Geo. E. Hunt	Tailor	6	12	.....	.....	.....

MARTIN'S FERRY.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
Novelty Mold Works.....	Glass molds	8	.....	1	Minors	Complied ..	.....
Elson Glass Works.....	Tableware, etc.....	260	20	50	"	Complied ..	.....
F. McCord & Bro.....	Brick ..	19	.....	6	"	Complied ..	.....
Laughlin Nail Co	Nails	325	.....	50	"	Complied ..	.....
Martin's Ferry Stove Works.....	Stoves.....	27	.....	.....	Elevator; building.....	.....	.....
H. Bettis	Barrels.....	4	.....	.....	.....	.....	.....
Geo. McKims..	Nail machines	4	.....	.....	.....	.....	.....
Spruce, Baggs & Co	Stoves.....	25	.....	1	Minors	Complied ..	.....
Dithridge Flint Glass Works	Tumblers, etc.....	125	25	40	"	Complied ..	.....
L. Spence.....	Steam engines, etc	23	1	1	Minors; machinery; build'g.	Complied ..	.....
D. H. Souders	Buggies, etc..	4	.....	2	"	Complied ..	.....
Martin's Ferry Keg and Barrel Co	Barrels, etc.....	60	.....	5	"	Complied ..	.....
Hyle Jones Manufacturing Co....	Thrashing machines, etc	6	.....	.....	Machinery .....	.....	.....
Buckeye Glass Works.....	Glassware	165	75	60	Minors; machinery; elevator	Complied ..	.....
Branch of Benwood Mills	Pig iron	55	.....	.....	.....	.....	.....
J. Kerr & Son..	Doors, sash, etc.....	9	.....	.....	.....	.....	.....
B. Exley & Co	"	10	.....	.....	.....	.....	.....
Henry Warwood.....	Miners' tools.....	4	.....	.....	.....	.....	.....
Wm. Mann.....	Machinery	24	.....	.....	.....	.....	.....

BELLAIRE.

Lantern Globe Co.....	Lantern globes	60	20	15	Minors	Complied ..	.....
Crystal Window Glass Co	Window glass.....	55	.....	6	"	Complied ..	.....
Bellaire Steel and Nail Works	Nails, etc	600	.....	50	"	Complied ..	.....
Union Window Glass Works	Window glass.....	60	.....	8	"	Complied ..	.....
DuBois & McCoy	Doors, sash, etc.....	24	.....	3	"	Complied ..	.....
Bellaire Bottle Co.....	Bottles	100	.....	30	"	Complied ..	.....
Belmont Glass Works.....	Glassware	185	20	35	Minors; machinery; elevator	Complied ..	.....

Bellaire Barrel Works.....	Barrels.....	16	.....	.....	.....	.....	.....
James Fitton	Gas fitting.....	10	1	2	Minors .....	.....	Complied...
Bellaire Tribune.....	Newspaper	4	.....	1	" .....	.....	Complied...
Ohio Lantern Co.....	Lanterns	65	10	8	" .....	.....	Complied...
Bellaire Stamping Co.....	Metal specialties.....	110	25	75	" .....	.....	Complied...
T. Ault & Son.....	Flour, etc	7	1	.....	Machinery .....	.....	.....
Bellaire Goblet Co	Goblets, etc.....	210	15	60	Minors; machinery; building.	.....	Complied...
Enterprise Window Glass Co.....	Window glass.....	54	.....	5	" .....	.....	Complied...
Bellaire Window Glass Works.....	"	104	.....	2	" .....	.....	Complied...
Ohio Valley Foundry Co	Stoves, etc.....	45	.....	.....	.....	.....	.....
Rodefer Bros	Lamp globes.....	85	15	25	Minors .....	.....	Complied...
Ætna Foundry & Machine Shop..	Repair shop, etc	13	.....	.....	.....	.....	.....
Ætna Glass Manufacturing Co	Glass	175	20	50	Minors .....	.....	Complied...
B. Barnhill	Boilers	4	.....	.....	.....	.....	.....
Buckeye Lantern Co	Lanterns	3	5	.....	.....	.....	.....
Stewart & Ford ..	Flour, etc.....	8	.....	.....	.....	.....	.....

BRIDGEPORT.

Standard Iron Co	Corrugated iron.....	190	.....	15	Minors .....	.....	Complied...
Bridgeport Glass Co.....	Fruit jars.....	70	.....	10	" .....	.....	Complied...
Ætna Iron and Steel Co	Iron and steel	600	.....	10	" .....	.....	Complied...
La Belle Glass Works	Cut glass, etc.....	260	15	60	" .....	.....	Complied...
L. C. Leech.....	Barrels, etc.....	7	.....	.....	.....	.....	.....
Diamond Mills.....	Flour, etc	12	.....	.....	.....	.....	.....
R. J. Baggs & Son.....	Doors, sash, etc.....	35	.....	.....	.....	.....	.....
Bridgeport Machine Shop	Machine repairing.....	4	.....	.....	.....	.....	.....

CARROLL COUNTY.

CARROLLTON.

H. H. Whitcraft.....	Planing mill.....	3	.....	.....	Machinery.....	.....	.....
J. D. Moreledge.....	Flour, etc.....	3	.....	.....	" .....	.....	.....
M. & K. Hardesty.....	"	4	.....	.....	.....	.....	.....

COLUMBIANA COUNTY.

SALEM.

J. Woodruff & Sons.....	Stoves.....	70	.....	2	Minors; mach'y, emery-wh'ls	.....	Complied...
Victor Stove Co.....	"	50	.....	2	" .....	.....	Complied...
W. J. Clark & Co.....	Step-ladders, screens, etc.....	12	.....	.....	Machinery.....	.....	.....
Boyle & Cary.....	Stoves.....	25	.....	1	Minors; mach'y, em'ry-wh'ls	.....	Complied...

SALEM—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
Bakewell & Mullins.....	Sheet metal work.....	100	.....	.....	.....	.....	.....
W. J. Clark & Co.....	" "	30	.....	2	Minors	Complied ..	.....
Purdy, Baird & Co.....	Sewer pipe.....	6	.....	.....	.....	.....	.....
Salem Lumber Co.....	Sash, doors, etc.....	10	.....	.....	Machinery .....	.....	.....
J. B. McNabb.....	Canned goods.....	4	8	4	Minors; seats for females....	Complied ..	.....
Salem Steel Wire Co.....	Steel wire, etc.....	265	35	60	" machinery	Complied ..	.....
Silver & Deming Manufact'g Co....	Pumps, feed-cutters, etc.....	165	.....	5	"	Complied ..	.....
Buckeye Mills.....	Flour, etc.....	4	.....	.....	Machinery .....	.....	.....
S. L. Shanks & Co.....	Steam-boilers.. ..	15	.....	2	Minors	Complied ..	.....
Buckeye Engine Co.....	Engines, etc.....	180	.....	1	"	Complied ..	.....
Salem Flow Co.....	Flows	12	.....	.....	.....	.....	.....
M. L. Edwards Manufacturing Co	Butch'rs and blacksm's tools	15	.....	.....	.....	.....	.....
Stanley & Co.....	Flour, etc.....	6	.....	.....	Machinery .....	.....	.....
Carl Barckhoff.....	Church organs.....	35	.....	.....	" .....	.....	.....
LEETONIA.							
Cherry Valley Iron Works.....	Pig and bar iron.....	350	.....	18	Minors; machinery.....	Complied ..	.....
Grafton Furnace.....	Pig iron	70	.....	.....	.....	.....	.....
Leetonia Boiler Works.....	Boilers and iron bridges.....	8	.....	.....	.....	.....	.....
Rendall, Rankin & Co.....	Flour, etc.....	3	.....	.....	.....	.....	.....
EAST LIVERPOOL.							
McNicol, Burton & Co.....	Pottery ware.. ..	70	23	20	Minors; elevator.....	Complied ..	.....
Burford Brothers	" " ..	37	12	10	" building.....	Complied ..	.....
Dresden Co-Operative Pottery Co	" " ..	137	51	34	" machinery	Complied ..	.....
S. & W. Baggot.....	" " ..	37	5	6	"	Complied ..	.....
H. Brunt & Sons.....	Knobs, etc.....	20	4	7	"	Complied ..	.....
Rowe & Mountford.....	Pottery supplies.. ..	5	15	15	"	Complied ..	.....

Standard Co-Operative Pottery Co	Pottery ware.....	40	11	10	Minors	Complied .....	.....
Goodwin Brothers.....	"	107	35	28	"	Complied .....	.....
Golding & Sons Co.....	Flint and spar.....	8	.....	.....	Machinery; ventilation.....	.....	.....
C. Metsch.....	Flour, etc.....	4	.....	.....	Machinery .....	.....	.....
C. C. Thompson & Co.....	Pottery ware.....	143	36	26	Minors; building.....	Complied .....	.....
Cartwright Brothers.....	"	51	19	14	"	Complied .....	.....
Croxall & Cartwright.....	"	32	7	8	"	Complied .....	.....
Knowles, Taylor & Knowles.....	"	339	164	110	"	Complied .....	.....
A. J. Boyer.....	Machine work.....	13	.....	1	"	Complied .....	.....
Monroe Patterson.....	Pottery machinery.....	5	.....	.....	.....	.....	.....
George Morley & Sons.....	Pottery ware.....	34	7	8	Minors	Complied .....	.....
J. Wyllie & Son.....	"	46	13	7	"	Complied .....	.....
Vodrey Brothers.....	"	35	15	14	"	Complied .....	.....
William Brunt, Son & Co.....	"	100	60	30	"	Complied .....	.....
Homer Laughlin.....	"	81	31	25	"	Complied .....	.....
George Harker.....	"	60	27	18	"	Complied .....	.....
Friederick, Shenkle, Allen & Co..	"	40	5	5	"	Complied .....	.....
Burgess & Co.....	Pottery material.....	7	10	5	"	Complied .....	.....
East Liverpool Spindling Works..	Door-knob spindles.....	8	.....	5	"	Complied .....	.....
R. Thomas & Sons.....	Knob tops.....	27	8	11	"	Complied .....	.....
Wallace & Chetwynd.....	Pottery ware	63	30	8	"	Complied .....	.....

WELLSVILLE.

Wellsville Terra Cotta Works.....	Sewer pipe.....	10	.....	1	Minors; machinery.....	Complied .....	.....
Pioneer Pottery Works	Pottery ware	60	15	12	"	Complied .....	.....
C. & P. R. R. Repair Shop.....	Railroad repairs.....	285	.....	10	"	Complied .....	.....
J. Patterson & Son.....	Pottery ware	25	4	3	"	Complied .....	.....
Whitacre & Co.....	Wood-turning, etc.....	30	12	3	"	Complied .....	.....
Wellsville Plate & Sheet Iron W'ks	Sheet iron, etc.....	200	.....	10	"	Complied .....	.....
Stevenson & Co.....	Machine work.....	25	.....	.....	.....	.....	.....

COSHOCTON COUNTY.

BOSCOE.

Adams & Gleason.....	Doors, sash, etc.....	6	.....	.....	Machinery .....	.....	.....
D. Rose & Co.....	Furniture.....	23	.....	.....	Former orders.....	.....	Complied.
Empire Mills.....	Flour, etc.....	13	.....	.....	.....	.....	.....
W. H. Wilson.....	Blankets, flannels, etc.....	5	3	.....	.....	.....	.....
J. F. Williams.....	Flour, etc.....	2	.....	.....	.....	.....	.....

COSHOCTON.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
Buckeye Planing Mill.....	Doors, sash, etc.....	5	.....	.....	Machinery; building.....	.....	.....
Houston & Hay & Sons.....	Axles, springs, etc..	60	.....	5	.....	Complied ..	.....
Wm. Ferrell.....	Iron castings.....	3	.....	.....	.....	.....	.....
Tuscarawas Advertising Co.....	Advertising novelties.....	9	3	.....	.....	.....	.....
Coshocton City Mills.....	Flour, etc.....	6	.....	.....	.....	.....	.....
J. F. Williams & Co.....	"	11	.....	.....	.....	.....	.....

CRAWFORD COUNTY.

BUCYRUS.

C. Roehr.....	Planing mill	40	Machinery
Eagle Machine Works.....	Machinery	28	.....	2	Minors.....	Complied...	.....
C. Roehr..	Planing mill, etc.....	45	.....	10	Machinery; minors.....	Complied...	.....
G. Donnenworth & Bro.....	Lager beer.....	8	.....	.....	.....	.....	.....
Bucyrus Foundry and M'fg Co...	Steam excavators, etc.....	100	.....	2	Minors; machinery; elevator	Complied...	.....
Bucyrus Creamery.....	Butter	8	.....	.....	.....	.....	.....
T. & O. C. R. R. Shops.....	Railroad repairs.....	100	.....	2	Minors; machinery.....	Complied...	.....
P. Saeger.....	Wagons, buggies, etc.....	6	.....	.....	.....	.....	.....
Vollrath Bros.....	Planing mill	16	.....	.....	Machinery .....	.....	.....
Franze & Pope Knitting-Mach. Co.	Knitting machinery, etc.....	10	25	5	Minors	Complied...	.....
A. Shunk, Sr.....	Plows, etc.....	10	.....	.....	Building.....	.....	.....
T. A. Vollrath.....	Flour, etc.....	6	.....	.....	Machinery .....	.....	.....
Bucyrus Woolen Mill.....	Woolen goods.....	1	3	.....	.....	.....	.....
Geiger & Bush.....	Copper kettles.....	9	.....	.....	.....	.....	.....
Nussbaum & Bowers	Flour, etc.....	4	.....	.....	.....	.....	.....
G. K. Ziegler.....	"	7	.....	.....	Machinery .....	.....	.....
D. Picking & Co.....	Copper kettles.....	10	.....	.....	.....	.....	.....

CRESTLINE.

Talbot & Co.....	4	.....	.....	.....	.....
Eckstein & Ross.....	14	.....	.....	Machinery .....	.....
J. W. Pond & Co.....	3	.....	.....	" .....	.....
P., Ft. W. & C. R. R. Co.....	150	.....	6	Minors; machinery.....	Complied...
N. Burch Plow Works.....	8	.....	.....	.....	.....

GALION.

N. Y., P. & O. R. R. Shops.....	230	.....	.....	Machinery .....	.....
C., C., C. & I. R. R. Shop	50	.....	.....	.....	.....
Central Lounge Manufact'ng Co.	18	.....	.....	Machinery .....	.....
Squier & Homer.....	15	.....	.....	.....	.....
Central Ohio Wheel Co.....	100	1	35	Machinery; minors.....	Complied...
Armstrong, Daily & Co.....	35	.....	4	Minors.....	Complied...
Plank, Gray & Co	15	.....	.....	Machinery .....	.....

CUYAHOGA COUNTY.

CLEVELAND.

The Hart Manufacturing Co.....	18	.....	.....	.....	.....	.....
American Wire Co.....	450	.....	15	Minors .....	.....	Complied...
Prospect Machine Co	200	.....	20	" .....	.....	Complied...
National Carbon Co..	10	.....	10	" .....	.....	Complied...
Lake Erie Iron Co	200	30	20	Machinery .....	.....	.....
Forest City Carbon Co	40	.....	6	Minors; machinery .....	.....	Complied...
Cleveland Hardware Co.....	150	3	25	" .....	.....	Complied...
H. P. Nail Co	450	15	40	" elevator.....	.....	Complied...
Billings, Taylor & Co.....	20	3	.....	.....	.....	.....
Ohio Steel Barb Wire Fence Co ..	50	.....	25	Minors; machinery ..	.....	Complied...
Cleveland City Forge	400	.....	25	" .....	.....	Complied...
Acme Machine Co	40	.....	.....	.....	.....	.....
City Foundry Co.....	24	.....	.....	.....	.....	.....
Cleveland Cork Works.....	3	.....	.....	.....	.....	.....
Avery Elevator Bucket Co	12	.....	.....	Machinery .....	.....	.....
P. S. Balkwell	6	.....	.....	" .....	.....	.....
Britton Iron and Steel Co	200	.....	15	Minors; machinery .....	.....	Complied...
Buckeye Bridge and Boiler Works	100	.....	6	" .....	.....	Complied...
Bishop & Babcock Co	50	6	12	" .....	.....	Complied...
Excelsior Machine Works	20	.....	.....	.....	.....	.....
Ohio Steel Works.....	600	.....	25	Minors; machinery; elevator	.....	Complied...

CLEVELAND—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
Paige Car Wheel Co	Car wheels and roofing	45	1	.....	.....	.....	.....
Boulton Carbon Co	Carbon	80	.....	12	Minors	Complied .....	.....
King Iron Bridge M'fg Co	Bridges, roofs, etc	200	.....	25	"	Complied .....	.....
T. H. Brooks & Co	Iron founders	100	.....	8	"	Complied .....	.....
Cleveland & Pittsburgh R. R. Co.	Car repairs	125	.....	.....	.....	.....	.....
Lake Shore Foundry Co.....	Iron castings	275	.....	6	Minors	Complied .....	.....
Lake Shore R. R. Car Shops	Railroad repairs	150	.....	.....	Machinery .....	.....	.....
Jacob Mall	Lager beer	12	.....	.....	.....	.....	.....
J. Morgan & Co.....	Lithographs	70	3	8	Minors; fire-escape	Complied .....	.....
Eclipse Electrotpe Co	Electrotypes.....	9	.....	.....	.....	.....	.....
I. F. & T. D. Smith.....	Sewing-machine needles	12	12	.....	.....	.....	.....
Wm. Schake.....	Book-binding	5	6	.....	.....	.....	.....
Cleveland Electric Light Co.....	Electric light	20	.....	.....	Machinery .....	.....	.....
Standard Tobacco and Cigar Co...	Tobacco and cigars.....	150	100	10	Minors; machinery.....	Complied .....	.....
A. Jacobs	Shoes	9	8	.....	.....	.....	.....
H. H. Thorp Manufacturing Co...	Type foundry.....	16	10	.....	.....	.....	.....
Geo. Mitinger	Brass goods	8	.....	.....	.....	.....	.....
A. W. Sampliner.....	Cloaks	60	150	25	Minors	Complied .....	.....
D. Black & Co	"	25	150	30	"	Complied .....	.....
H. Freedman.....	Knit goods	3	50	40	"	Complied .....	.....
Landesman, Herscheimer & Co...	Cloaks	50	200	5	"	Complied .....	.....
Koch, Go'dsmith, Joseph & Co ...	Clothing	84	6	.....	.....	.....	.....
Ingraham Brush Works.....	Brushes	22	20	30	Minors	Complied .....	.....
W. T. Silver, Anisfield & Co	Cloaks	6	60	.....	.....	.....	.....
Schneider and Trenkamp Co	Gasoline stoves, etc	200	.....	50	Minors	Complied .....	.....
Miller Bros	Paints and varnishes.....	6	.....	.....	Building; elevator .....	.....	.....
Kean & Co	Builders' hardware, etc	6	4	.....	.....	.....	.....
Perkins Specialty Lock Co.....	"	25	.....	.....	Elevator.....	.....	.....

O. Daily	Brass goods.....	4	.....	.....	.....	.....	.....
Warswick Manufacturing Co	Pipe fittings	65	.....	9	Minors	Complied... ..	.....
Vouwie Bros	Baking powder, etc .. .	8	6	5	"	Complied... ..	.....
L. Schultz	Cloak lining	3	15	10	"	Complied... ..	.....
Erwin Hart Manufacturing Co.....	Sewing-machine tables.....	35	.....	4	"	Complied... ..	.....
Cleveland Steam Laundry.....	Laundrying	15	40	12	" machinery	Complied... ..	.....
J. M. Weitz & Co	Shoe uppers.....	14	5	.....	Machinery .....	.....	.....
E. F. Atwater & Co	Paper boxes.....	6	20	.....	.....	.....	.....
Spear & Wittman	Pants, shirts, etc.....	4	12	.....	Elevator; building.....	.....	.....
I. Stein.....	Hats and caps	6	11	6	Minors	Complied... ..	.....
Glidden and Jay Varnish Works..	Varnish and Japans	6	.....	.....	.....	.....	.....
Cleveland Rubber Co	Rubber goods	50	2	25	Machinery	Complied... ..	.....
Lithograph Tinware Co	Tinware.....	25	3	2	Minors; machinery	Complied... ..	.....
Geo. A. Ford	General jobbing	10	.....	2	Machinery	Complied... ..	.....
Fuldheim & Katzenstein	Hosiery	3	20	8	Minors	Complied... ..	.....
Cleveland Faucet Co	Faucets	15	3	.....	.....	.....	.....
Allen & Pierce.....	Shoes	20	30	10	Minors	Complied... ..	.....
Cleveland Electric Motor Co	Electric motors	12	.....	.....	.....	.....	.....
Lowman & Co	Carriages, etc.....	25	.....	.....	.....	.....	.....
W. J. White	Chewing gum	3	50	35	Minors	Complied... ..	.....
W. J. White	Paper boxes.....	1	7	.....	" .....	.....	.....
Forest City Electric Co.....	Electric supplies.....	8	.....	3	Minors	Complied... ..	.....
Montgomery & Co	Brass goods	25	1	6	Minors; mach'y; fire-escape	Complied... ..	.....
James Barwell.....	Handles.....	3	.....	.....	Machinery .....	.....	.....
F. Pollard	Show cases	28	.....	3	Minors; machinery.....	Complied... ..	.....
E. A. Shepard.....	Sash, doors, etc	25	.....	.....	Machinery .....	.....	.....
Cleveland Stair Building Co	Stairs	6	.....	.....	" .....	.....	.....
Bohm & Stuhr	Planing mill	35	.....	3	Minors; machinery.....	Complied... ..	.....
H. M. Hempsey & Son	Sash, doors, etc	40	.....	.....	Machinery .....	.....	.....
A. B. Lyman	Telegraph supplies.....	3	.....	.....	.....	.....	.....
George W. Shawk.....	Model-maker	3	.....	.....	.....	.....	.....
Purdy Machine Co.....	Wood-working machinery...	8	.....	.....	.....	.....	.....
J. H. Kreppenber.....	Wood turning	5	.....	.....	.....	.....	.....
Wm. Moll.....	Machine work.....	4	.....	.....	.....	.....	.....
C. S. Ransom & Co.....	Moorish fret work	32	2	.....	Elevator; machinery .....	.....	.....
Cleveland Barb Fence Co	Barb fence wire.....	20	.....	.....	.....	.....	.....
Lord, Bowler & Co	Machine works	35	.....	.....	Building .....	.....	.....
Stamped Elbow Co.....	Elbows.....	20	.....	10	Minors	Complied... ..	.....
Cleveland Steam Boiler Works...	Boilers	40	.....	5	Minors; machinery.....	Complied... ..	.....
Farmers' Brass Works.....	Brass goods	50	.....	8	Minors	Complied... ..	.....

CLEVELAND—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
Ullman Philpott Manufactur'g Co	Paints, printers' ink, etc	20			Machinery		
Viaduct Foundry Co.....	Gray iron castings	80		8	Minors; machinery; build'g	Complied	
Aurora Vapor Stove Co	Vapor stoves	10					
Aithison & Little	Elevators, etc	15					
Carrick & Cochrane.....	Plating works	15		4	Minors; emery-wheels		
Cleveland Ship-building Co	Engines and ships	200			Elevator; machinery	Complied	
Eclipse Iron Works.....	Architectural iron work	35					
Viaduct Boiler Works.....	Boilers	12			Machinery		
Theodore Kunetz.....	Sewing-machine cabinet wrk	300		35	Minors	Complied	
W. J. Gordon.....	Brass goods	75		10	Minors; building; ventilation	Complied	
C. H. Purton	Steam pumps	8					
Cleveland Burial Case Co	Undertakers' supplies	175	40	10	Minors; machinery	Complied	
John Griffith	Malting house	5					
Forest City Spring Works	Carriage springs, etc	45			Ventilation		
A. M. Simmerly.....	Derricks	14					
Globe Iron Works Co...	Iron steamships, etc	250		25	Minors	Complied	
Globe Iron Works Co.'s Ship-yard	Iron steamships, etc	250		18	"	Complied	
Bellows & Dickey	Stamps and iron type	14	1	6	"	Complied	
Elwell & Doty	Door knobs	8	15	4	"	Complied	
Powell Tool Co	Edge tools	100			Machinery		
Beecher Furnace Co	Furnaces and stoves	24			Elevator; building		
Hughes Bros	Pumps and bolt machinery	35					
Clark Fruit-jar Co	Fruit jars	6	7	3	Minors; machinery	Complied	
Malin & Co	Spool wire	9		6	Minors	Complied	
Benedict & Keyes.....	Vapor stove furniture	10					
G. R. Gale.....	Machinery	15					
Cleveland Gas Pipe Fitting Co...	Pipe and fitting	13					
John S. Oram	Drill presses, etc	20			Machinery		

Myers, Osborn & Co.....	Stoves.....	200	.....	.....	.....	Emery-wheels; machinery..	.....	.....
Cleveland Spring Co.....	Carriage springs	75	.....	8	.....	Minors	Complied ..	.....
Cleveland Stove Co	Stoves.....	60	.....	10	.....	" .....	Complied ..	.....
Bourne & Knowles M'fg Co.....	Nuts and washers.....	50	.....	15	.....	" .....	Complied ..	.....
Bruno Kniffer.....	Mill machinery.....	12	1	.....	.....	Machinery .....	.....	.....
E. L. Scheier & Co.....	Upholstered furniture.....	20	4	.....	.....	.....	.....	.....
Rubber Paint Co	Paint	10	.....	.....	.....	.....	.....	.....
Garry Iron Roofing Co	Iron roofing	150	2	.....	.....	.....	.....	.....
Cleveland Milling Co.	Flour and feed	40	.....	.....	.....	.....	.....	.....
Thomas Manning, Jr., & Co.....	Machinery	20	.....	.....	.....	.....	.....	.....
Liman, Strong & Co	Marble	50	.....	.....	.....	.....	.....	.....
Langeren Manufacturing Co.....	Machinery	9	.....	3	.....	Minors	Complied ..	.....
F. Smeed & Co	Planing mill	25	.....	4	.....	Minors; machinery	Complied ..	.....
Cleveland Iron Ore Paint Co.....	Iron ore paint.....	4	.....	.....	.....	Elevator; ventilation .....	.....	.....
Carling & Co.....	Ale and porter.....	8	.....	.....	.....	.....	.....	.....
Gardner & Clark.....	Grain elevator	6	.....	.....	.....	.....	.....	.....
Gorham & Sargent.....	Washboards	80	.....	35	.....	Minors; machinery	Complied ..	.....
Dow, Clark & Gardner	Flour and feed	45	1	6	.....	" .....	Complied ..	.....
C., C., C. & I. R. R. Shops.....	Railroad repairs	350	.....	.....	.....	Machinery; ventilation .....	.....	.....
S. M. Carpenter.....	Car wheels and castings	35	.....	.....	.....	Elevator; machinery; build'g .....	.....	.....
Lufkin, Rule & Co	Lumbermen supplies	15	.....	3	.....	Minors	Complied ..	.....
Viaduct Brass Works.....	Brass goods	5	.....	.....	.....	.....	.....	.....
W. B. Cobb.....	Eclipse speed lathes	7	.....	.....	.....	.....	.....	.....
Hall & Co.....	Wood turning	4	.....	.....	.....	.....	.....	.....
F. Henderson.....	Planing mill	14	.....	3	.....	Minors; machinery	Complied ..	.....
Bell, Cartright & Co.....	"	25	.....	2	.....	" .....	Complied ..	.....
Forest City Brass Works	Brass goods	12	.....	4	.....	Minors	Complied ..	.....
Palmer & Dellory.....	Castings.....	115	.....	6	.....	Minors; machinery	Complied ..	.....
S. Fix & Sons	Blacksmithing	5	.....	.....	.....	.....	.....	.....
Cleveland Linseed Oil Co.....	Linseed oil	60	2	.....	.....	.....	.....	.....
T. W. Burnham.....	Feed	7	.....	.....	.....	.....	.....	.....
Clough, Witt & Co.....	Machinists	9	.....	.....	.....	.....	.....	.....
Wooden Tool Co.....	Edge tools.....	12	.....	.....	.....	.....	.....	.....
W. R. Eynon & Co	Machinists' tools.....	6	.....	.....	.....	.....	.....	.....
Gobeille Pattern Works	Wooden patterns.....	50	12	.....	.....	.....	.....	.....
F. Zimmerman	Picture frames, etc	40	.....	20	.....	Minors; machinery	Complied ..	.....
Bowler & Co.....	Car wheels and castings	150	.....	.....	.....	.....	.....	.....
Peter Gerlach & Co	Saws and machinery.....	40	.....	.....	.....	Machinery .....	.....	.....
Clev'd Frog and Crossing Works..	Railroad frogs, etc	20	.....	.....	.....	.....	.....	.....
Industry File Works.....	Files	12	.....	.....	.....	.....	.....	.....

CLEVELAND--Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to--	Compliances as to--	
		Males.	Females.	Minors.		Minors.	Other orders.
John Bemersch.....	Pattern shop	6	.....	.....	.....	.....	.....
Forest City Machine Works.....	Horse-powers and feed mills	12	.....	.....	.....	.....	.....
American Bronze Works	Brass and bronze castings	22	.....	4	Minors	Complied ..	.....
Excelsior Iron Works Co ...	Machinery	65	.....	.....	.....	.....	.....
Gibson & Price	Sheet lead, etc.....	8	.....	.....	Machinery .....	.....	.....
Scheidegger Bros.....	Brass foundry	12	.....	4	Minors	Complied ..	.....
T. H. Bullock Bellows & Forge Co	Bellows	12	.....	.....	Machinery .....	.....	.....
R. J. Hays & Co	Foundry facings	4	.....	.....	.....	.....	.....
Cleveland Machine Co.....	Box machines, etc	75	4	6	Minors; machinery.....	Complied ..	.....
Rogers & Son.....	Furniture	65	.....	6	"	Complied ..	.....
Buchan & Co	Soap	4	.....	.....	Elevator; machinery .....	.....	.....
A. Muelhasen.....	Tannery, etc	26	.....	5	Minors	Complied ..	.....
McMyler & Co.....	Hoisting machinery.....	18	.....	.....	.....	.....	.....
H. W. Randall.....	Brass foundry	5	.....	2	Minors	Complied ..	.....
A. Kinderman	Gas stoves	8	.....	.....	.....	.....	.....
Sherwin & Williams	Paints, etc.....	150	50	50	Minors	Complied ..	Complied.
Vanwie Gas Stove Co	Gas stoves.....	8	.....	.....	.....	.....	.....
Kufholz Bros.....	Machinists	8	.....	.....	.....	.....	.....
W. L. Hulbert.....	Lubricators.....	5	.....	.....	.....	.....	.....
Cleveland Nail Works	Nails	5	.....	4	Minors	Complied ..	.....
A. M. Benson.....	Stave and barrel machinery	11	.....	.....	Building; machinery.....	.....	.....
Cleveland Plating Co.....	Nickel plating	6	.....	.....	.....	.....	.....
J. H. Morley & Co	White lead	60	.....	.....	.....	.....	.....
Geo. H. Kingsley	Varnish	3	.....	.....	.....	.....	.....
H. Miller & Co	Malt-house	9	.....	.....	Machinery .....	.....	.....
C. Burnside	Tannery.....	13	.....	.....	" .....	.....	.....
Cleveland Provision Co	Provision and packing house	225	6	Minors	Complied
Stoppel's Sons Brewery.....	Lager beer.....	20

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CLEVELAND—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
Central Brass Foundry	Brass goods	4	.....	.....	.....	.....	.....
M. Love & Co.....	"	10	.....	.....	.....	.....	.....
W. A. Jeavons	Japanning	6	.....	.....	.....	.....	.....
Bruhn & Taggart ..	Carriages, etc	10	.....	.....	.....	.....	.....
T. J. Tounson & Co	Cornice, etc.....	25	.....	.....	.....	.....	.....
Forest City Dash Co	Carriage dashes	5	.....	.....	Machinery .....	.....	.....
Lewis Richardson.....	Wood-work.....	25	.....	.....	" .....	.....	.....
J. Knight.....	Punches and shears	3	.....	.....	.....	.....	.....
H. V. Hartz	Special machinery	15	.....	.....	.....	.....	.....
Printing Ink Works	Printing ink	4	.....	.....	.....	.....	.....
Eben S. Coe & Co.....	Lard oil, etc	10	2	.....	.....	.....	.....
Chafer & Beecher..	Steam-heating	35	.....	.....	Machinery .....	.....	.....
American Vapor Stove Co.....	Vapor stoves	6	.....	.....	Building .....	.....	.....
J. J. Hopping.....	Book-binding	4	6	.....	.....	.....	.....
C. T. Heisel	Chewing gum	2	30	20	Minors; ventilation	Complied ..	.....
Mount & Co	Printing.....	22	2	5	Building; elevator; minors ..	Complied ..	.....
Smith & Denham	Tin work, etc	10	.....	.....	.....	.....	.....
Geo. H. Wilson ..	Cigar boxes	7	6	.....	.....	.....	.....
Kennedy, DeForest, Parsons & Co.	Tin and cepper work.....	20	.....	.....	.....	.....	.....
Wm. Weber	Cigar boxes	10	7	3	Minors	Complied ..	.....
C. H. Hengst	Gold and silver plating.....	3	.....	.....	.....	.....	.....
F. & H. Born	Tinware, etc	37	.....	10	Minors; emery-wh'ls; elevat'r ..	Complied ..	.....
Standard Oil Co	Oils	2,000	.....	150	Machinery; minors; elevator ..	Complied ..	.....
Marsh & Harwood Co....	Chemicals	50	.....	.....	.....	.....	.....
Valley Railroad Shops	Railroad repairs	59	.....	.....	Machinery .....	.....	.....
Frederick Hempy & Co	Packing cases, etc.....	130	.....	50	Minors; machinery	Complied ..	.....
Central Blast Furnace.....	Pig iron	175	.....	.....	.....	.....	.....
Roberts Manufacturing Co	Baskets and hoops	Idle.	.....	.....	.....	.....	.....

CLEVELAND—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
Adams & Ford	Boots and shoes	60	20	.....	Elevator .....	.....	.....
Forest City Paper Co	Rag sorting	6	30	.....	Seats for females; elevator; fire-escape .....	.....	.....
Wims Bros. & Judson	Printing and binding	25	10	10	Minors	Complied ..	.....
C. A. Bowsby	Ale and porter	8	.....	.....	.....	.....	.....
Cleveland Twist Drill Co	Twist drills	35	.....	.....	.....	.....	.....
John Ernst	Paper boxes	2	4	.....	.....	.....	.....
Arctic Ice Machine Manuf'g Co ..	Ice machinery	40	.....	.....	Machinery .....	.....	Complied.
Kellogg & Jenkins	Packing house	15	.....	.....	.....	.....	.....
Eagle Foundry	Castings	25	.....	.....	.....	.....	.....
Cleveland Petrolatum Co	Petrolatum jelly	6	.....	.....	.....	.....	.....
Cleveland Steam Gauge Co	Steam-gauges, etc	7	.....	.....	.....	.....	.....
Lazier Bros	Furniture	12	.....	.....	Elevator .....	.....	.....
Excelsior Water Proof Co ..	Water-proof coats	50	30	15	Minors; building	Complied ..	.....
Rauch & Lang	Carriages, etc	30	.....	.....	.....	.....	.....
Greif Bros	Barrels	75	.....	.....	.....	.....	.....
Forest City Chemical Works	Coal-tar products	12	.....	.....	.....	.....	.....
J. W. Fawcett & Co	Oils	8	.....	.....	.....	.....	.....
Thompson & Herrick	Tallow, etc	4	.....	.....	.....	.....	.....
J. P. Robison & Co	Packing house	55	.....	.....	Machinery .....	.....	.....
Cleveland Target Co	Targets, etc	50	.....	30	Minors; ventilation; mach'y	Complied ..	.....
James Davies	Soap	4	.....	.....	Elevator .....	.....	.....
Brush Electric Light & Power Co..	Electricity	35	.....	.....	.....	.....	.....
L. Schlather Brewing Co	Lager beer	75	.....	.....	.....	.....	.....
J. Baehr's Brewery	"	15	.....	.....	.....	.....	.....
C. E. Gehring	"	50	.....	.....	.....	.....	.....
Mercantile Manufacturing Co	Chairs	7	.....	.....	Machinery .....	.....	.....
Hill Clutch Works	Clutches, etc	11	.....	.....	.....	.....	.....

CLEVELAND—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
Star Lubricating Oil Co.....	Oils	3	.....	.....	.....	.....	.....
Ohio Varnish and Oil Co.....	Varnish, etc.....	4	.....	.....	.....	.....	.....
Eberhard Manufacturing Co.....	Malleable iron.....	550	.....	65	Minors	Complied ..	.....
Globe Oil Co.....	Oils	3	.....	.....	Elevator.....	.....	.....
Excelsior Refining Co..	Oils, etc.....	52	.....	3	Minors	Complied ..	.....
Jacob Welti	Cooperage.....	50	.....	4	Machinery; minors	Complied ..	.....
Dangler Refining Co	Naphtha	10	.....	.....	.....	.....	.....
Standard Oil Co.....	Oils, etc ..	12	.....	.....	.....	.....	.....
National Refining Co.....	"	10	.....	.....	.....	.....	.....
Brooks Oil Co.....	"	9	.....	.....	.....	.....	.....
Union Rolling Mill Co.....	Iron	325	.....	10	Minors; machinery; build'g.....	Complied ..	.....
Union Crossing Boiler Works.....	Boilers	8	.....	.....	Machinery .....	.....	.....
Cleveland Fire Brick Co.....	Fire-brick	15	.....	.....	.....	.....	.....
Samuel Woodhouse..	Chains	4	.....	.....	.....	.....	.....
Emma Furnace.....	Pig iron	75	.....	.....	.....	.....	.....
Cleveland Refining Co	Oils	17	.....	.....	.....	.....	.....
Great Western Oil Co.....	"	35	.....	.....	.....	.....	.....
Canfield Oil Co	"	12	.....	1	Minors; machinery; build'g.....	Complied ..	.....
E. F. Dietrich.....	"	10	1	.....	.....	.....	.....
American Lubricating Oil Co.....	"	175	.....	12	Minors	Complied ..	.....
K. Egert	Cooperage.....	45	.....	5	"	Complied ..	.....
F. Mulhauser.....	Shoddies	60	200	50	Machinery; minors	Complied ..	.....
Beckman, Senior & Co	Woolen goods	40	40	20	Minors	Complied ..	.....
Cleveland Rolling Mill Co.....	Iron and steel.....	4,000	.....	150	Elevator; machinery; minors	Complied ..	.....
Cincinnati Bottling Works	Bottling beer	4	.....	.....	.....	.....	.....
W. F. Carlhaus	"	4	.....	.....	.....	.....	.....
Rice & Schindler.....	"	6	.....	1	Minors	Complied ..	.....
The Oppman Brewing Co	Lager beer.....	12	.....	.....	.....	.....	.....

CLEVELAND—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
F. Stoneman & Bros.....	Boxes.....	Idle.	.....	.....	.....	.....	.....
A. McAllister.....	Builder ..	60	.....	2	Minors; machinery; elevator	Complied ..	.....
Street Railway Supply Co.....	Street railway supplies.....	10	.....	1	Minors	Complied ..	.....
Ohio Brush Works.....	Brushes ..	4	10	13	"	Complied ..	.....
Adam Wetzel.....	Carriages ..	5	.....	1	"	Complied ..	.....
Forest City Carpet Cleaning Co...	Carpet cleaning ..	4	.....	1	"	Complied ..	.....
W. Sayle & Co.....	Builders.....	12	.....	.....	Machinery .....	.....	.....
Woodl'd Av. & W. S. St. R. R. Shops	Street cars.....	12	.....	.....	Ventilation .....	.....	.....
Stone Bros.....	Rag sorting	4	18	.....	Fire-escape; ventilation .....	.....	.....
A. N. Kellogg Newspaper Co.....	Newspaper printing.....	40	1	2	Minors; elevator; mach'y...	Complied ..	.....
The Clafin Manufacturing Co.....	Can openers, etc.....	9	1	1	Emery-wheels; minors	Complied ..	.....
Chas. S. Rosenburg.....	Cigars.....	10	5	3	Minors	Complied ..	.....
L. Elgelcke.....	Dye works.....	3	2	.....	.....	.....	.....
Auer Pfeife.....	Carriages	8	.....	.....	.....	.....	.....
Hill Manufacturing Co.....	Incubators	3	.....	.....	.....	.....	.....
Wm. Kenney.....	Paper boxes.....	2	12	1	Minors ..	Complied ..	.....
Bennhoff Bros.....	Carriages	12	.....	2	"	Complied ..	.....
G. A. Tinnerman.....	Ranges	6	.....	2	"	Complied ..	.....
Schaefer & Eckhardt.....	Carriages	10	.....	1	"	Complied ..	.....
J. Schmidt & Son..	"	6	.....	2	"	Complied ..	.....
Herman Junge.....	Furniture	25	1	4	"	Complied ..	.....
Bell Steam Laundry	Laundrying	1	5	1	"	Complied ..	.....
Cleveland Knitting Mills.....	Hosiery, etc.	2	15	5	"	Complied ..	.....
Robinson Bros. & Co	Crackers	20	10	8	"	Complied ..	.....
Myers & Lee.....	Machinery	4	.....	1	"	Complied ..	.....
West Side Furniture Co.....	Furniture	15	.....	.....	Machinery .....	.....	.....
T. M. Hammond.....	Wheelbarrows.....	6	.....	.....	" .....	.....	.....
Craig Baking Powder Co.....	Baking powder.....	4	2	4	Minors	Complied ..	.....

Cleveland Window Shade Co.....	Window shades	20	10	6	Minors	Complied ...
W. H. Gerlock & Co.....	Laundrying	30	37	20	"	Complied ...
Dangler Stove Manufacturing Co.....	Vapor stoves, etc.....	100	.....	30	"	Complied ...
Elkanah Lane.....	Machinists' tools.. ..	12	.....	.....	.....	.....
John Malpas.....	Machinery	2	.....	.....	.....	.....
Standard Tool Co.....	Twist drills.....	75	4	20	Minors	Complied ...
Cleveland Manufacturing Co.....	Gas fixtures.....	20	.....	2	"	Complied ...
Cleveland Electric Manu'g Co...	Time detectors.....	11	.....	.....	Machinery .....	.....
T. E. Bright	Machinery	12	.....	3	Minors; machinery.....	Complied ...
Silver Metal Manufacturing Co...	Spoons, forks, etc.....	30	6	.....	Machinery; building.....	.....
F. W. Gracie.....	Corsets, etc.....	1	19	2	Minors; machinery.....	Complied ...
O. Lapham & Co.....	Washboards.....	40	.....	10	Elevator; minors; mach'y...	Complied ...
Cleveland Baking Co.....	Crackers, etc.....	45	30	10	Minors.....	Complied ...
T. Wilson	Flour and feed.....	2	.....	.....	Machinery; building.....	.....
A. Waldeck... ..	Machinery	2	.....	.....	.....	.....
D. Round.. ..	Chains	12	.....	.....	.....	.....
W. H. Caine.....	Flagging	20	.....	.....	.....	.....
Victor Pump Co.....	Pumps	12	.....	.....	.....	.....
H. B. Hunt.....	Sheet iron work.....	110	.....	10	Minors; building.....	.....

BEDFORD.

Taylor Chair Co.....	Chairs	88	12	6	Minors; elevator; machinery	Complied ...
Thomas Mighton.....	Saw mill	2	.....	.....	Building .....	.....
Marbel & Shattuck Chair Co.....	Chairs	40	.....	4	Minors; machinery	Complied ...
The Howe Chair Co.....	"	5	.....	4	Minors	Complied ...
Halsey Gates.....	Flour and feed.....	2	.....	.....	.....	.....

COLLINWOOD.

L. S. & M. S. R. R. Co.....	Railroad repairs.....	6	.....	.....	Ventilation .....	.....
Moses Cooley.....	Bending works	3	.....	.....	.....	.....
W. A. Miner.....	Planing mill	2	.....	.....	.....	.....

DEFIANCE COUNTY.

DEFIANCE.

Karst & Fenger.....	Doors, sash, etc.....	25	.....	5	Minors	Complied ...
Burgland & Shead.....	Butter tubs, etc.....	55	4	10	Minors; former orders.....	Complied ...
Defiance Woolen Mills.....	Woolen goods.....	15	17	5	Minors	Complied ...
Defiance Machine Works.....	Wood-working machinery...	175	1	.....	.....	.....
Corwin & Kiser.....	Carriages, etc.....	10	.....	.....	.....	.....

DEFIANCE—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
Kuhn Brothers.....	Tobacco boxes.....	40	1	9	Former orders.....	Complied ...	Complied.
Kuhn Brothers.....	Lumber	25			.....	.....	.....
Christ. Diehl.....	Beer	13			.....	.....	.....
Turnbull Wagon Co.....	Wagons & agricul. supplies..	175		15	Minors	Complied ...	.....
L. Archembeault.....	Wagons, etc.....	5			.....	.....	.....
Peter Schlosser & Son.....	Carriages, etc.....	20			.....	.....	.....
C. Geiger & Son.....	Furniture ..	35	1		Former orders.....	.....	Complied.
Wilhelm & Son.....	Flour, etc.....	12			“ .....	.....	Complied.
Marshall & Greenlen.....	Hoops and staves	30		6	Minors	Complied ...	.....
D. F. Holston & Son.....	Hoops.....	50		15	“	Complied ...	.....
The Express.....	Printing.....	4	1	2	“	Complied ...	.....
Levi & Ginsburg.....	Cigars.....	25	3	4	“	Complied ...	.....
Defiance Democrat.....	Printing.....	5	2		.....	.....	.....
Defiance Local News.....	“	3			.....	.....	.....
Defiance Paper Co	Wrapping paper.....	20		5	Minors	Complied ...	.....
John Marshall.....	Lumber, etc.....	11			.....	.....	.....
J. V. Olds.....	Spokes and hubs..	11			.....	.....	.....
George H. Dicus.....	Cooperage.....	15			.....	.....	.....
Alexander Friedman.....	Cigars.....	3	2		.....	.....	.....
Arbuckle, Ryan & Co.....	Flour, etc.....	13			Former orders... ..	.....	Complied.
Oconto Box and Barrel Co.....	Barrels and boxes.....	30		10	Minors; former orders.....	Complied ...	Complied.
Crowe & Hooker.....	Hoops and staves.....	38		15	Minors	Complied ...	.....
Trowbridge & Eddy..	Staves and heading.....	50		15	Minors; former orders.....	Complied ...	Complied.
John Rowe & Son.....	Hoops	4			.....	.....	.....

ERIE COUNTY.

SANDUSKY.

D. J. Brown & Co.....	30	.....	5	Minors; machinery	Complied ...	.....
Germania Basket Co	10	15	6	Minors; seats for females; building	Complied ...	.....
George W. Icsman	8	.....	.....	.....	.....	.....
Sandusky Tool Co.....	200	.....	30	Minors; machinery	Complied ...	.....
Smith & Williams.....	3	.....	.....	Machinery; ventilation.....	.....	.....
Ohlemacher Lime Co.....	30	.....	4	Minors	Complied ...	.....
J. B. Johnston & Co.....	14	.....	.....	.....	.....	.....
Kilbourne & Co.....	20	.....	.....	.....	.....	.....
J. T. Johnson.....	30	.....	1	Minors; machinery	Complied ...	.....
B. & O. R. R. Shops.....	130	2	4	"	Complied ...	.....
B. & O. Grain Elevator	9	.....	.....	Machinery. ....	.....	.....
J. M. Soncrant.....	16	.....	4	Minors	Complied ...	.....
Johnson, Kunz & Co.....	8	.....	.....	.....	.....	.....
Schoeffle & Sloane	40	.....	5	Minors; machinery	Complied ...	.....
Woolsey Wheel Co.....	125	.....	18	Minors	Complied ...	.....
B. B. Hubbard & Son.....	4	.....	1	Machinery; minors	Complied ...	.....
August Kunzman.....	10	.....	.....	.....	.....	.....
Lea, Herbert & Co.....	20	.....	2	Minors; machinery	Complied ...	.....
Sandusky Mach'e and Ag. Works	45	.....	.....	.....	.....	.....
Barney & Kilby.....	200	.....	6	Minors	Complied ...	.....
J. C. Butler & Co.....	130	.....	12	Machinery, minors; fire-esc'e	Complied ...	.....
Eureka Lumber Co.....	20	.....	4	Minors; machinery;	Complied ...	.....
George Cheetham.....	2	.....	.....	Ventilation .....	.....	.....
I. B. & W. R. R. Shops.....	159	1	4	Minors; machinery	Complied ...	.....
The Sandusky Wheel Co.....	240	.....	20	Eleva'r; ventilation; minors	Complied ...	.....
Anthony Ilg & Co.....	12	.....	.....	.....	.....	.....
Albert Schwehr.....	13	18	6	Minors	Complied ...	.....
Portland Boiler Co.....	12	.....	.....	.....	.....	.....
Mrs. H. Merram.....	4	.....	.....	.....	.....	.....
Frank Slang.....	15	.....	.....	.....	.....	.....
J. Kuebler & Co.....	22	.....	.....	.....	.....	.....
Hinde, Hanson & Co.....	14	4	.....	Machinery.....	.....	.....
J. S. Cowdery.....	20	6	16	Minors; seats for females; machinery.....	Complied ...	.....
G. B. Hodgeman Manufactur'g Co	100	.....	12	Minors; machinery.....	Complied ...	.....

FULTON COUNTY.

WAUSEON.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
Northwestern Republican.....	Printing.....	3	1	.....	.....	.....	.....
Tribune	"	3	1	.....	.....	.....	.....
Democratic Expositor..	"	2	1	.....	.....	.....	.....
W. J. Harper.....	Repair shop.....	4	.....	.....	.....	.....	.....
Phillip Schletz.....	Jack screws, land rollers, etc	3	.....	.....	.....	.....	.....
H. H. Williams & Co.....	Butter tubs, lumber, etc... .	18	.....	.....	.....	.....	.....
Wauseon Roller Mills and Eleva'r	Flour, etc.....	18	.....	.....	.....	.....	.....

GEAUGA COUNTY.

CHARDON.

C. M. Riddle	Lumber, etc.....	4	.....	.....	Machinery .....	.....	.....
W. H. Chase.....	Planing mill.....	2	.....	.....	" .....	.....	.....
Williams & McGowan.....	Flour, etc.....	3	.....	.....	" .....	.....	.....

HANCOCK COUNTY.

FINDLAY.

Defendorf & Armstrong	Doors, sash, etc	10	.....	.....	Machinery .....	.....	.....
Ohio Lantern Co.....	Lanterns	40	10	4	Minors; elevator	Complied ..	.....
J. J. Bradner	Bee supplies.....	4	.....	1	Minors	Complied ..	.....
Columbia Glass Co.....	Glassware.....	120	6	40	"	Complied ..	.....
Moore & Platner	Sawing lumber	6	.....	.....	.....	.....	.....
C. D. Hayward & Co	Lumber, lath, etc	12	.....	.....	.....	.....	.....
John Shull Novelty Works	Iron novelties	12	.....	.....	.....	.....	.....
Shull & Parker	Doors, sash, etc	40	.....	.....	Former orders .....	.....	Complied.
Kridler & Foreman	Carriages, etc	14	.....	.....	.....	.....	.....

Christen & Co	Soda and mineral water	3	.....	.....	.....	.....
Buck & Reimund	Carriages, etc	22	.....	.....	.....	.....
Austin & Biggs	Coffee and spice mill... ..	3	.....	.....	.....	.....
Findlay Machine Works	Gas and oil well supplies. ...	30	.....	.....	.....	.....
G. Marvin & Co.....	Flooring, etc.....	4	.....	.....	.....	.....
Findlay Stave and Handle Co	Stoves and handles	25	.....	.....	.....	.....
Findlay Table Manufacturing Co..	Tables	75	.....	.....	.....	.....
Briggs Iron and Tool Co	Axes, picks, etc	55	.....	.....	.....	.....
L. Rambo & Son	Flannels, yarn, etc.....	9	3	.....	.....	.....
McManness & Seymour	Handles and rakes.....	25	.....	4	.....	Complied ...
Wm. T. Heck.....	Doors, sash, etc	8	.....	15	.....	Complied ...
Daily Jeffersonian	Newspaper	11	.....	.....	.....	.....
David Kirk.....	Flour, etc.....	12	.....	.....	.....	.....
I. J. Kerr.....	Lumber	5	.....	.....	.....	.....
E. B. Hartwell	Handles	7	.....	.....	.....	.....
Findlay Brass Works	Brass goods	4	.....	.....	.....	.....
Daily Courier.....	Newspaper	12	.....	.....	.....	.....
Daily Republican	"	11	.....	.....	.....	.....
McManness & Seymour	Linseed oil	5	.....	.....	.....	.....
W. K. Marvin & Son	Machine shop, etc.....	10	.....	.....	.....	.....
Findlay Flour Mills.....	Flour, etc	5	.....	.....	.....	.....
Findlay Rolling Mill Co.....	Merchant iron.....	25	.....	.....	.....	.....

HARRISON COUNTY.

CADIZ.

Cadiz Republican	Printing.....	7	.....	.....	.....	.....
Oliver Clark	Doors, sash, etc	5	.....	.....	.....	.....
J. & J. W. Rise	Flour, etc.....	6	.....	.....	.....	.....
D. D. Van Fossen....	Carriages, etc	4	.....	.....	.....	.....
W. H. Rife	Machine repairs	3	.....	.....	.....	.....

HENRY COUNTY.

DESHLER.

Deshler Foundry & Machine Shop	Machine shop, etc	6	.....	.....	.....	.....
J. W. Cottingham.....	Pearlash.....	4	.....	.....	.....	Complied.
Ball & Smith	Lumber	16	.....	.....	.....	.....
Heidelberg Bros.....	Tobacco boxes	8	.....	.....	.....	.....
A. W. Lee	Hoops.....	12	.....	.....	.....	.....
A. W. Lee	Staves and heading	40	.....	2	.....	Complied ...
			.....	5	.....	Complied ...

DESHLER—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
The Deshler Flag	Newspaper	2	.....	.....	.....	.....	.....
Mitchell & Widner	Lumber and tile	8	.....	.....	.....	.....	.....
HOLGATE.							
Shelly & Bro.	Staves, heading, etc	60	.....	10	Minors	Complied ..	.....
J. Laubenthal	Lumber, shingles, etc	6	.....	.....	.....	.....	.....
Herthneck & Buchele	Wagons, etc	3	.....	.....	.....	.....	.....
Prayer Bros. & Co	Staves and heading	35	.....	12	Minors	Complied ..	.....
The Holgate Times	Newspaper	2	.....	.....	.....	.....	.....
Centennial Mills ..	Meal, etc	2	.....	.....	.....	.....	.....
HAMLER.							
A. W. Lee	Staves and heading	35	.....	4	Minors	Complied ..	.....
E. E. Gardner	Lumber	9	.....	.....	.....	.....	.....
Judson Parker	"	20	.....	.....	.....	.....	.....
A. Rose	Wagon repair shop	3	.....	.....	.....	.....	.....
LIBERTY.							
A. R. Morgan	Tile	4	.....	.....	.....	.....	.....
Liberty Press	Printing	2	.....	.....	.....	.....	.....
J. A. Henricks	Lumber and feed	5	.....	.....	.....	.....	.....
NAPOLEON.							
A. Bruner	Hoops	37	.....	10	Minors	Complied ..	.....
Thiessen & Hildred	Doors, sash, etc	8	.....	.....	Machinery; building .....	.....	.....
The Northwest	Printing	5	.....	.....	.....	.....	.....
Signal	"	3	.....	.....	.....	.....	.....

Joseph Shaff	4	.....	.....	.....	.....
John Miller	4	.....	.....	.....	.....
T. Ludwig	3	.....	.....	Former orders	.....
A. J. Sagers	4	.....	.....	.....	.....
M. Britton	12	.....	.....	.....	.....
Napoleon Woolen Mills	10	15	.....	.....	.....
C. Vock	4	.....	.....	.....	.....
F. Roessing	5	.....	.....	.....	.....
J. Koller & Co	6	.....	.....	.....	.....
C. F. Beard	5	.....	.....	.....	.....
Napoleon Foundry	5	.....	.....	.....	.....
Napoleon Elevator	2	.....	.....	.....	.....

HOLMES COUNTY.

MILLERSBURG.

H. H. McCulloch	3	Machinery
Holmes County Farmer	6	1	.....	.....	.....
Etter & Speinig	7	.....	.....	.....	.....
Henry Snyder	15	.....	3	Minors	Complied
Holmes County Republican	3	3	.....	.....	.....
Gray & Adams	6	.....	.....	.....	.....
Shires & Darrah	6	.....	.....	.....	.....
Empire Flour Mills	8	.....	.....	.....	.....

HURON COUNTY.

NORWALK.

F. B. Case	6	12	2	Minors; elevator	Complied
Stewart Dowl Pin Works	12	.....	5	"	Complied
J. M. Hare	2	.....	.....	.....	.....
Troy Steam Laundry	3	1	.....	.....	.....
Sprague & French	4	25	6	Minors	Complied
L. S. & M. S. R. R. Shops	170	.....	10	"	Complied
The A. B. Chase Co	140	.....	4	Machinery; minors	Complied
W. & L. E. R. R. Shops	85	.....	.....	"	.....
B. Cortright	5	.....	.....	"	.....
C. W. Smith	8	.....	.....	.....	.....
C. H. Gove & Co	7	.....	.....	.....	.....
G. M. Cleveland	6	.....	.....	.....	.....
E. S. Tuttle	2	.....	.....	.....	.....

NORWALK—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
..... c use.....	Machine works	3			Building; ventilation .....	.....	.....
Jacob Boehm	Planing mill	7			Machinery .....	.....	.....
Theo. Williams	Boilers	10			Building .....	.....	.....
Norwalk Light and Power Co.	Flour, etc	7			Machinery; building .....	.....	.....
Norwalk Machine Works	Electric light	4			.....	.....	.....
W. H. Pebble	Machine work	12			.....	.....	.....
Lanning Printing Co.	Carriages	4			.....	.....	.....
William Schubert	Printing	12	5	2	Minors; ventilation	Complied ..	.....
Hexagon Postal Box M'fg Co	Planing mill	4			Machinery .....	.....	.....
Smith, Kimberger & Co	Postal boxes	17		1	Elevator; minors; mach'y ..	Complied ..	.....
Reflector Printing Co	Doors, sash, etc	13			Machinery .....	.....	.....
H. B. Hanford	Printing	13	2		.....	.....	.....
S. E. Crawford	Fanning mills	8			.....	.....	.....
C. H. Fuller	Pumps	3			.....	.....	.....
Bostwick & Burgess	Carriages	8			.....	.....	.....
Norwalk Chronicle	Carpet sweepers	8			.....	.....	.....
	Newspaper	7		1	Minors	Complied ..	.....
BELLEVUE.							
Ward & Collins (Mill A)	Flour, etc	32			Machinery .....	.....	.....
Ward & Collins (Mill B)	"	18			" .....	.....	.....
Gross & Weber	Planing mill	4			.....	.....	.....
Fremont Cultivator Co.	Agricultural implements	50	1	4	Minors	Complied ..	.....
Joseph Erdrick	Cooperage	16		1	"	Complied ..	.....
COLLINS.							
A. M. Pierce	Saw mill, etc	3			.....	.....	.....
M. M. Perkins	Furniture, etc	2			.....	.....	.....

F. & H. H. Dague.....	Brick, tile, etc.....	6	.....	2	Minors	Complied ..
J. H. Humphrey.....	Wood turning	12	.....	1	Machinery; minors.....	Complied ..
L. B. McKesson	Lumber, etc.....	28	.....	.....	" .....	.....

WAKEMAN.

J. J. McMann.....	Wagon felloes, etc.....	5	.....	.....	Machinery .....	.....
Geo. Humphrey	"	6	.....	.....	Building; machinery .....	.....
S. T. Gibson	Flour, etc	2	.....	.....	.....	.....
J. R. Griffin	Cooperage	4	.....	.....	.....	.....

MONROEVILLE.

Heyman & Co	Flour, etc.....	10	.....	.....	Mach'y; building; fire-escape .....	.....
John Hosford	Fanning mills	2	.....	1	Minors	Complied ..
S. E. Smith	Agricultural implements	7	.....	.....	Machinery; building.....	.....
Jacob Boehm.....	Flour, etc	3	.....	.....	" .....	.....

JEFFERSON COUNTY.

STEUBENVILLE.

Sumner Glass Co	Bottles	95	.....	50	Minors	Complied ..
Gill Bros. & Co	Lamp chimneys, etc	235	45	110	"	Complied ..
Jefferson Iron Works	Pig iron and nails.....	500	.....	40	"	Complied ..
Pearl Mills	Flour, etc	6	.....	.....	Machinery .....	.....
Ohio Valley Clay Co.....	Glass melting pots	24	6	.....	.....	.....
James Means & Co.....	Founders and machinists.....	50	.....	.....	.....	.....
Riverside Iron Works.	Pig iron	95	.....	.....	.....	.....
A. J. Beatty & Sons.....	Table glassware, etc	475	75	125	Minors	Complied ..
Humphrey Glass Co	Glass novelties.....	17	3	10	"	Complied ..
Robert Hyde	Doors, sash, etc	6	.....	.....	Machinery .....	.....
Raney, Sheal & Co.....	Flour, etc	7	.....	.....	" .....	.....
Electric Light and Power Co	Electric light	4	.....	.....	" .....	.....
Wm. McDowell.....	Stairs and railings.....	4	.....	.....	.....	.....
L. Anderson & Sons.....	Doors, sash, etc.....	25	.....	.....	Former orders	Complied.
Robinson, Irwin & Co.....	Machine repair shop.....	5	.....	.....	.....	.....
Steubenville Steam Laundry	Laundrying	6	2	.....	.....	.....
Sprague & Carnahan	Blank books	4	3	.....	.....	.....
Steubenville Pottery Co.....	Decorated ware, etc.....	110	50	10	Minors; former orders	Complied ..
W. L. Sharp & Son	Stoves, etc.....	50	.....	.....	.....	.....
Caswell & Pearce	Furniture	35	.....	.....	Former orders	Complied.
Cyrus Massey	Doors, sash, etc.....	10	.....	.....	.....	.....

TORONTO.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
Myers & McFerren.....	Doors, sash, etc.....	8	.....	.....	Machinery .....	.....	.....
Great Western Fire Clay Co.....	Sewer pipe, etc	75	.....	.....	" .....	.....	.....
John Francy's Sons & Co.....	"	55	.....	.....	" .....	.....	Complied.
Toronto Tribune.....	Newspaper	4	.....	.....	.....	.....	.....
Penn. M'fgand Mining Supply Co.	Sewer pipe, etc.....	55	.....	.....	.....	.....	.....
A. F. Taylor.....	Doors, sash, etc.....	5	.....	.....	Machinery .....	.....	.....
Bowers & Custer.....	Flour, etc.....	2	.....	.....	" .....	.....	.....

LAKE COUNTY.

PAINESVILLE.

Coe & Wilkes.....	Machine work.....	21	.....	.....	.....	.....	.....
The Paige Manufacturing Co.....	"	48	.....	.....	.....	.....	.....
Solon Hall.....	Iron castings.....	7	.....	.....	.....	.....	.....
R. Laroe.....	Sash, doors, etc.....	4	.....	.....	Machinery .....	.....	.....
Painesville Manufacturing Co....	Window shade rollers.....	20	.....	6	Minors; machinery.....	Complied .....	.....
Moody & Co.....	Flour, etc....	4	.....	.....	Machinery .....	.....	.....
S. Bigler & Co.....	"	10	.....	.....	" .....	.....	.....
Swezey & Johnson.....	Butchers' skewers.....	38	.....	5	Minors	Complied .....	.....
Geauga Stove Co.....	Stoves.....	10	.....	.....	.....	.....	.....

LORAIN COUNTY.

LORAIN.

The United Brass Co.....	Brass goods.....	250	40	20	Minors	Complied .....	.....
Lorain Iron Foundry.....	Castings.....	6	.....	.....	.....	.....	.....
C. L. & W. R. R. Shops.....	Railroad cars.....	36	.....	.....	Machinery.....	.....	.....
C. L. & W. R. R. Repair Shop.....	Railroad repairs.....	90	.....	.....	Ventilation .....	.....	.....

Lorain Lumber and Manu'g Co..	5	.....	Machinery .....	.....
Williams, Barrows & Co.....	6	.....	Fire-escape; machinery .....	.....
ELYRIA.				
Henry K. Day	6	.....	1 Minors	Complied ..
J. W. Hart.....	12	.....	.....	.....
Griffin Road Machinery Co.....	4	.....	.....	.....
Topliff & Ely.....	30	.....	Machinery; elevator.....	.....
C. W. Plocher Bottling Co.....	5	1	.....	.....
L. S. & M. S. R. R. Shops.....	16	.....	.....	.....
Thomas J. Armstrong.....	4	.....	.....	.....
C. Parsch.....	11	.....	Building; machinery.....	.....
West. Automatic Mach. Screw Co.	70	1	Minors; mach'y; emery-wh'ls	Complied ..
Elyria Shear Co.....	70	5	Minors	Complied ..
Blaha & Co.	3	.....	" .....	Complied ..
Ohio Co-operative Shear Co.....	45	2	"	Complied ..
G. H. Arnold.....	2	.....	.....	.....
Elyria Variety Works.....	6	.....	Machinery .....	.....

LUCAS COUNTY.

TOLEDO.

The Western Manufacturing Co...	60	.....	15 Minors; machinery	Complied ..
The Witken Manufacturing Co ...	55	.....	Elevator; minors; machinery	Complied ..
Conant Bros	30	.....	Machinery .....	.....
Toledo Foundry and Machine Co.	66	.....	.....	.....
Ricard & Ricard	10	.....	.....	.....
W. H. H. Smith & Co	125	.....	.....	.....
Toledo Block Works	14	.....	.....	.....
Wineberger & Dallet.....	6	.....	.....	.....
T. N. Quale.....	9	.....	.....	.....
Shoup & Trudeau.....	10	.....	Ventilation .....	.....
W. I. Wilcox Cordage & Supply Co.	12	12	Minors	Complied ..
T. J. Collins & Co.	12	.....	Machinery .....	.....
J. Matheis.....	3	.....	.....	.....
The Stevens Filter Co.....	15	.....	.....	.....
The Schauss Manufacturing Co ...	36	.....	2 Minors	Complied ..
Vulcan Iron Works	100	.....	Elevator; building.....	.....
Toledo Carriage Woodwork Co ...	55	.....	Minors; machinery	Complied ..
Toledo Bending Co.....	70	.....	Machinery .....	.....

TOLEDO—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
J. V. Sanfleet ..	Planing mill	40	.....	.....	Machinery .....	.....	.....
Finley Brewing Co.....	Lager beer.....	85	.....	.....	.....	.....	.....
Eagle Foundry..	Iron castings	6	.....	.....	.....	.....	.....
Toledo Molding Co	Frames, cornice, etc.....	150	50	60	Building; minors; seats for females.....	Complied ..	.....
Mueller & Co..	Cooperage.....	7	.....	.....	.....	.....	.....
Buckeye Brewing Co.....	Lager beer	52	.....	.....	.....	.....	.....
Locke & Trowbridge	Lithographers	27	.....	4	Minors	Complied ..	.....
W. O. Brown & Sons	Packing house.....	10	.....	.....	Elevator .....	.....	.....
J. B. Bortz	Rag sorting.....	3	12	2	Minors; elevator	Complied ..	.....
Werts, Kirk & Bigelow	Crackers, etc	40	8	6	“ seats for females ..	Complied ..	.....
Toledo Electric Co	Electric light, etc	18	.....	.....	Machinery .....	.....	.....
L. S. Bortree & Co	Clothing and bustles	4	60	3	Minors; machinery; elevator ..	Complied ..	.....
Toledo Spring & Variety Iron Wks.	Machinery, etc	7	.....	1	Minors	Complied ..	.....
Railroad Printing Co	Printing.....	4	.....	1	“	Complied ..	.....
John Monagele & Co	Laundrying	9	4	.....	.....	.....	.....
Buckeye Paint and Varnish Co...	Paints.....	8	.....	.....	Elevator; machinery .....	.....	.....
The B. F. Wade Co	Printers, etc	35	9	10	Minors	Complied ..	.....
Leland Smith & Co	Cigars..	25	14	4	“	Complied ..	.....
Blade Printing and Paper Co	Printing, etc.....	50	20	10	Machinery; minors; building ..	Complied ..	.....
Henry Peiter	Cigars.....	14	2	2	Minors	Complied ..	.....
Wendt & Rausch	Book binding	4	5	2	“	Complied ..	.....
Spear, Johnston & Co	Printing.....	11	.....	4	“	Complied ..	.....
Alex. Black.....	Cloaks	25	200	6	“	Complied ..	.....
Union Paper Box Co.....	Paper boxes.....	3	15	4	“	Complied ..	.....
Buckeye Steam Laundry	Laundrying	4	13	.....	Machinery .....	.....	.....
Shaw, Kendall & Co	Machinery	75	Elevator..
J. L. Creswell..	Iron cornice	45	4	Minors	Complied

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TOLEDO—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
Herbert Baker	Foundry and machine works	60		2	Min'rs; mach'y; em'ry-wh'ls.	Complied ..	.....
R. F. Russell	Planing mill	6			Machinery .....	.....	.....
Toledo Door, Sash and Blind Co.	Doors, sash, etc	41		4	Minors: machinery	Complied ..	.....
Toledo Wheelbarrow Works	Wheelbarrows	40		2	Minors	Complied ..	.....
Detwiler Corn City Mills	Feed mill	1			.....	.....	.....
T. N. Quale	Flour, etc	15			Machinery .....	.....	.....
Union Manufacturing Co.	Sewing machines, etc	200		18	Minors; machinery	Complied ..	.....
Toledo Brewing and Malting Co.	Beer and malt	51			Machinery; elevator .....	.....	.....
Peter Welter	Carriages, etc	3			.....	.....	.....
John Gogal	Wagons, etc	3			.....	.....	.....
Toledo Bolt and Nut Co.	Bolts and nuts	100	30	40	Minors; building; elevator ..	Complied ..	.....
H. B. Milmine	Founders and machinists	100		5	Minors; machinery	Complied ..	.....
Ames, Bonner & Co.	Brushes	52	20	50	Minors; elevator	Complied ..	.....
Tol. St'm Marble and Granite Wks	Marble and granite	18			.....	.....	.....
Flin & Young	Furniture finishing	3			.....	.....	.....
C. Z. Kroh	Carriage tops	32	6	4	Minors	Complied ..	.....
G. F. C. Kloeppinger ..	Iron cornice	3			.....	.....	.....
Buckeye Tobacco Works	Tobacco ..	10	40	10	Minors	Complied ..	.....
Albert Newkom	Cut stone	14	1		.....	.....	.....
Toledo Natural Gas Co.	Smithing and plumbing	18		1	Minors	Complied ..	.....
Dolphin Paint Co	Paints and colors	6			.....	.....	.....
Crescent Candy Co.	Confectionery ..	10	5		.....	.....	.....
W. H. Birkenkamp & Co	Trunks, etc	6			.....	.....	.....
Ruel Skinner	Cigars	6			.....	.....	.....
Eggeman, Dugind & Co	Trunks, etc	20		2	Minors	Complied ..	.....
Van Noorden Bros	Clothing ..	5	6		.....	.....	.....
Davis Bros	Knit goods ..		75		.....	.....	.....
Toledo Cigar Factory	Cigars	10	20		.....	.....	.....

Enterprise Knitting Works	Hosiery, etc	14	175	85	Minors	Complied ...	.....
John B. Shepler	Trunks, etc	16	.....	.....	Elevator; building .....	.....	.....
Toledo Steam Laundry	Laundrying	5	23	.....	Seats for females .....	.....	.....
Toledo Overall Co	Overalls, etc	5	50	3	Minors	Complied ...	.....
Toledo Wire and Iron Works	Wire, etc	10	.....	2	Minors; elevator	Complied ...	.....
Manhattan Mills	Flour, etc	65	.....	.....	.....	.....	.....
Barber & Starr	Planing mill	8	.....	2	Minors	Complied ...	.....
Toledo Tobacco Works	Tobacco	6	8	.....	.....	.....	.....
Wm. I. Wilbur	Bar fixtures	3	.....	.....	.....	.....	.....
Milburn Wagon Co	Wagons, etc	450	2	30	Minors; mach'y; elevator ..	.....	.....
Fountain Crossing and Signal Co ...	Railroad crossings, etc	35	1	.....	Machinery; emery-wheels ...	Complied ...	.....
Toledo Cot and Wringer Co	Cots, wringers, etc	25	7	16	Minors	Complied ...	.....
Tubular Axle Co	Tubular axles	10	.....	.....	.....	.....	.....
Metzger Bros	Linseed oil	23	.....	.....	Machinery .....	.....	.....
Great Western Pin Co	Pins	12	33	15	Minors	Complied ...	.....
H. E. Davis	Cigar boxes	2	4	2	"	Complied ...	.....
Lake Erie Bottling Works	Bottling works	10	.....	2	"	Complied ...	.....
Montgomery & Vooman	Printing	7	.....	1	"	Complied ...	.....
Pearl Steam Laundry	Laundrying	6	24	3	"	Complied ...	.....
City Bottling Works	Bottling beer	10	.....	.....	.....	.....	.....
Weber, Von Behron & Parson	Tinware	8	.....	.....	.....	.....	.....
Stollberg, Clapp & Briggs	"	9	.....	1	Minors	Complied ...	.....
Smith Bridge Co	Bridges	125	.....	2	"	Complied ...	.....
C, H. & D. Railroad Shops	Railroad repairs	8	.....	.....	.....	.....	.....
C, H. & D. Elevator Co	Grain elevator	14	.....	.....	.....	.....	.....
Consolidated Rolling Stock Co	Railroad cars	50	.....	.....	Machinery .....	.....	.....
Wabash Elevator Co	Grain elevator	20	.....	.....	Machinery; fire-escape .....	.....	.....
L. S. & M. S. R. R. Elevator Co ...	"	17	.....	.....	" .....	.....	.....
Toledo Plow Co	Plows	17	.....	.....	.....	.....	.....
West Toledo Paper Mill	Binders' boards	14	3	6	Minors; machinery	Complied ...	.....
C, H. & D. Elevator Co. (A)	Grain elevator	12	.....	.....	Fire-escape; machinery .....	.....	.....
J. M. Shunck & Bro	Cooperage	38	.....	.....	.....	.....	.....
Union Elevator Co	Grain elevator	10	.....	.....	.....	.....	.....
Palace Steam Laundry	Laundrying	3	4	.....	Building .....	.....	.....
Toledo Bottling Works	Bottling beer	5	.....	.....	.....	.....	.....
Domestic Custom Steam Laundry	Laundrying	2	8	.....	.....	.....	.....
Eagle Brewing Co	Beer	10	.....	.....	.....	.....	.....
A. F. Eisenhart	Cigars	9	2	2	Minors	Complied ...	.....
Wabash Elevator Co	Grain elevator	15	.....	.....	.....	.....	.....
Wabash Railroad Shops	Railroad repairs	265	2	4	Minors; machinery	Complied ...	.....

Toledo—Continued.

Name of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
Mitchell & Rowland Lumber Co.	Lumber mills.....	350			.....	.....	.....
Sternfeld & Dallet	Cigars.....	30	5	2	Minors	Complied ..	.....
Lloyd Bros	Marble and granite	8			.....	.....	.....
Eagle Spice Mills	Coffee and spices	5	2		.....	.....	.....
Boss & Holbrook.....	"	4	3		Machinery; elevator.....	.....	.....
Williams & Co.....	Chairs	35		10	Minors; mach'y; elevator...	Complied ..	.....
Toledo Pail Factory....	Tobacco and candy pails.....	25		10	"	Complied ..	.....
The Jewel Manufacturing Co	Sewing machines, etc.....	100		15	"	Complied ..	.....
Door Street Elevator and Mills ...	Feed mills.....	6			.....	Complied ..	.....

MAHONING COUNTY.

YOUNGSTOWN.

Brown, Bonnell & Co	Pig and merchant iron	1,800	.....	75	Minors; building; mach'y; elevator	Complied ..	.....
Youngstown Stamping Co	Stamped tinware, etc.....	20	25	6	Minors; machinery	Complied ..	.....
Geo. H. Dingley	Doors, sash, etc	30		2	"	Complied ..	.....
The Forsythe Scale Co	Scales, letter presses, etc....	15		3	"	Complied ..	.....
Lloyd, Booth & Co	Founders and machinists....	37		1	"	Complied ..	.....
W.A. Wood Mower and ReaperCo	Agricultural implements ..	200		5	"	Complied ..	.....
Wm. Tod & Co	Founders and machinists..	100		6	"	Complied ..	.....
W. B. Pollock & Co	Boilers, etc	50		8	"	Complied ..	.....
John W. Ellis.....	Doors, sash, etc	8			.....	.....	.....
Briar Hill Coal and Iron Co ...	Pig iron	95			Machinery; building .....	.....	.....
Youngstown Lumber Co	Doors, sash, etc	20		3	Minors; machinery	Complied ..	.....
Homer Baldwin	Flour, etc.....	12			Machinery .....	.....	.....
Youngstown Carriage & Wagon Co	Buggies, wagons, etc	100		10	Minors; emery-wheels.....	Complied ..	.....

Vinton & Morrison	Brass castings	3	.....	.....	.....	.....	.....
W. C. Robinson	Carriages, etc.	8	.....	.....	Minors .....	.....	Complied
Youngstown Stove Co.	Stoves	33	.....	.....	1 .....	.....	.....
Rhudolf & Kurz	Carriages, etc.	3	.....	.....	.....	.....	.....
City Mills	Flour, etc.	11	.....	.....	.....	Building; machinery .....	.....
Briar Hill Iron and Coal Co.	Pig iron	200	.....	.....	.....	" .....	.....
Youngstown Rolling Mill Co..	Merchant iron	450	.....	.....	45	Minors; machinery	Complied
Geo. Turner	Iron fences, etc.	4	.....	.....	.....	.....	.....
Mahoning Valley Iron Co	Merchant iron	1,100	.....	.....	.....	Minors; machinery; build'g	Complied
Cartwright, McGurdy & Co.	"	550	.....	.....	60	"	Complied
John Smith's Sons	Beer, ale and porter	18	.....	.....	.....	Machinery .....	.....
American Tube and Iron Co.	Iron tubes and pipes.. ..	350	.....	.....	50	Minors	Complied
The Arms Bell Co.	Bolts and nuts	90	.....	6	25	Minors; machinery	Complied

HAZELTON.

Youngstown Car Manufactur'g Co	Railroad cars	175	.....	4	.....	Minors; machinery	Complied
Andrews Bros. & Co	Iron and steel	450	.....	30	.....	" .....	Complied

MEDINA COUNTY.

WADSWORTH.

Cramer & Chandler.. ..	Machinery	6	.....	.....	.....	.....	.....
F. Yoder	Cigars	5	1	.....	.....	.....	.....
Wadsworth Milling Co.	Flour, etc.	7	.....	.....	.....	Machinery .....	.....
M. A. Yoder	Planing mill	5	.....	.....	.....	" .....	.....
The Garfield Injector Co.	Injectors	18	.....	1	.....	Minors; machinery..	Complied
J. S. Oberholtzer	Planing mill..	10	.....	.....	.....	Machinery .....	.....

MEDINA.

Hickox Bros	Planing mill	2	.....	.....	.....	.....	.....
Medina Carriage Co.	Carriages, etc.	5	.....	.....	.....	.....	.....
A. B. Bishop	"	8	.....	.....	.....	.....	.....
O. C. Shepherd	Flour, etc.	3	.....	.....	.....	Machinery; building .....	.....
B. H. Wood & Co.	Planing mill	12	.....	.....	.....	Machinery .....	.....
G. E. Weber & Co.	Stove hollow-ware	60	.....	2	.....	Minors	Complied
A. I. Root	Bee supplies	55	45	8	.....	Machinery; elevator; minors	Complied

OTTAWA COUNTY.
OAK HARBOR.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
Charles A. Leow	Carriages, etc.	6	.....	.....	.....	.....	.....
H. H. Mylander	Staves and heading	30	.....	3	Minors; machinery	Complied ..	.....
J. Watts	Planing mill	4	.....	1	“	Complied ..	.....
Ampach Bros.	Saw mill and hoop factory ..	39	.....	16	“	Complied ..	.....
Wash. Gordon	Planing and saw mill	25	.....	.....	Machinery .....	.....	.....
C. Roose	Staves and heading	42	.....	.....	Machinery .....	.....	.....
Portage Mills	Flour, etc.	2	.....	.....	Machinery .....	.....	.....

PORT CLINTON.

A. Spies & Co.	Doors, sash, etc.	6	.....	.....	Machinery .....	.....	.....
Seuyfert & Co.	Carriages, etc.	5	.....	.....	.....	.....	.....
O. J. True & Co.	Flour, etc.	4	.....	.....	.....	.....	.....
A. Couche & Co.	Saw mill	10	.....	.....	Machinery .....	.....	.....
Robert Hoffinger	Flour, etc.	8	.....	.....	.....	.....	.....

PAULDING COUNTY.

CECIL.

J. B. Buegnot, Bros. & Co.	Staves and heading	40	.....	10	Minors	Complied ..	.....
M. Simpson	Lumber and tile	6	.....	.....	.....	.....	.....

PAULDING.

Weidman & Eichling	Staves	25	.....	5	Minors	Complied ..	.....
G sfer Bros	Planing mill, etc.	5	.....	.....	.....	.....	.....
Weidman & Eichling	Heading	20	.....	.....	.....	.....	.....
G. A. Smith	Flour, etc.	3	.....	.....	.....	.....	.....

Gazette.....	Printing.....	3	.....	.....	.....
Democrat.	"	3	.....	.....	.....
PAYNE.					
N. E. Prentice.....	Flour, etc.....	9	.....	Machinery .....	.....
P. H. Hyman.....	Lumber and staves.....	15	.....	Minors	Complied ..
Payne Hoop Co.....	Hoops.....	34	.....	" .....	Complied ..
H. F. Schnelker & Co.....	Staves.....	18	.....	" .....	Complied ..
Payne Review.....	Printing.....	2	.....	.....	.....
Jacob Ream.....	Lumber and flooring.....	10	.....	.....	.....
Miller & Zind.....	Wagons, etc.....	3	.....	.....	.....

PORTAGE COUNTY.

KENT.					
J. Turner & Sons Manufacturing Co..	Worsted goods.....	65	70	40	Minors; elevator
H. A. & M. Kent.....	Flour, etc	2	.....	.....	Machinery
N. Y., P. & O. R. R. Shops	Repair shops	320	.....	.....	" .....
T. G. Parsons.....	Planing mill	10	.....	.....	.....
Williams Bros	Flour	30	.....	.....	.....
Railway Speed Recorder Co	Railway Speed Recorders ..	80	.....	8	Minors
Grohe Bros.....	Planing mill	5	.....	.....	Machinery
John F. Byers	Machine work ..	5	.....	.....	.....
C. T. Goeppinger.....	Tannery.....	4	.....	.....	.....

RAVENNA.

Merts & Riddle	Coaches, etc ..	50	.....	.....	.....
Johnston, Johnston & Co	Cigar boxes.....	2	6	.....	.....
Buckeye Foundry.....	Iron castings.....	2	.....	.....	.....
E. & R. Knapp	Pumps	3	.....	.....	.....
Ravenna Glass Co	Glass bottles, etc.....	65	2	16	Minors
Ravenna Mills	Flour, etc ..	2	.....	.....	Complied ..
D. L. Baldwin & Son	Planing mill, etc	8	.....	.....	.....
Quaker Mill Co	Oat meal	35	30	18	Minors
O. A. Bissell	Cooperage.....	5	.....	.....	Complied ..
Ravenna Woolen Mills	Woolen goods.....	3	2	.....	.....
Seymore & Olin.....	Flour, etc .....	.....	.....	.....	.....
Diamond Glass Co	Window glass.....	56	.....	2	Minors

PUTNAM COUNTY.

LEIPSIC.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
O. E. Townsend & Co	Doors, sash, etc	6	.....	.....	Machinery .....	.....	.....
Buckeye Stave Co.....	Stoves and heading	28	.....	8	Minors	Complied ..	.....
O. W. Irish & Co	Butchers' skewers.....	25	3	5	"	Complied ..	.....
J. H. Fisher	Carriages, etc	5	.....	.....	.....	.....	.....
A. F. Easton	Lumber	5	.....	.....	.....	.....	.....

OTTAWA.

Rice, Brown & Co.....	Wheels ..	35	.....	4	Minors; former orders ..	Complied ..	Complied.
J. R. Smith	Lumber	7	.....	.....	.....	.....	.....
Ottawa Gate Manufacturing Co...	Gates, sleds, etc.....	15	.....	.....	Former orders.....	.....	Complied.
Brinkman Bros	Carriages, etc	8	.....	.....	.....	.....	.....
William Annesser	Flour, etc.....	4	.....	.....	Former orders .....	.....	Complied.
Robeault & Ream	Planing mill, etc	6	.....	.....	" .....	.....	Complied.

COLUMBUS GROVE.

J. F. McBride.....	Jeans, blankets, etc	4	2	2	Minors	Complied ..	.....
Buckeye Stave Co.....	Staves and heading	50	.....	10	Minors; former orders	Complied ..	Complied.
J. S. Lehman & Co	Drain tile	6	.....	.....	Machinery .....	.....	.....
M. Pease	Flour, etc.....	5	.....	.....	" .....	.....	.....
Crawford & Co.....	Lumber	4	.....	.....	" .....	.....	.....
Perkins & Allen	Doors, sash, etc	10	.....	.....	Building; former orders .....	.....	Complied.
J. F. Jones.....	Ax handles	15	.....	.....	.....	.....	.....
Henderson & Light	Flour, etc.....	5	.....	.....	.....	.....	.....
W. R. Kaufman.....	Drain tile	6	.....	.....	.....	.....	.....

RICHLAND COUNTY.

SHELBY.

F. Brucker	Doors, sash, etc	4	Machinery .....	.....
Shelby Carriage Works	Carriages, etc	8 .....	.....	.....
J. S. Trimble	Castings	4 .....	.....	.....
Sutter, Barkdull & Co	Furniture	20 .....	.....	.....
Shelby Times	Printing	3 .....	.....	.....
Shelby City Mills	Flour, etc	7	Former orders	Complied.
Shelby Mill Co	"	60	"	Complied.

MANSFIELD.

New American Oil Co.....	Oil	5 .....	.....	.....
Charles Schroer.....	Furniture	6	Machinery; building.....	.....
W. B. Carpenter.....	Tannery.....	4 .....	.....	.....
Faust & Wapner.....	Furniture	6 .....	.....	.....
Western Suspender Co.....	Suspenders, etc	20	Minors	Complied ..
Buckeye Suspender Co	"	4	Former orders .....	.....
J. R. Richardson	Soda and mineral waters.....	4 .....	.....	Complied.
Mansfield Machine Co.....	Steam engines.....	150	Former orders	Complied.
The Aultman & Taylor Co.....	Threshers and engines	400	"	Complied.
Mansfield Steam Boiler Works.....	Boilers	28 .....	.....	.....
Ohio Suspender Co.....	Suspenders	4 .....	.....	.....
Hautzenauder & Co.....	Cigars.....	45	Minors	Complied ..
Daily Democrat.....	Printing	6 .....	.....	.....
The Buechler Printing Co.....	"	3 .....	.....	.....
Mansfield Herald.....	"	18 .....	.....	.....
Mansfield Barrel Factory	Barrels	18 .....	.....	.....
Hicks, Brown & Co.....	Flour, etc.....	17 .....	.....	.....
The Barnett Brass Co.....	Brass goods.....	30 .....	.....	.....
Mansfield Plating Works.....	Metal plating.....	10	Minors	Complied ..
Mansfield Buggy Co	Carriages, etc.....	75	Former orders	Complied.
Gilbert Waugh & Co.....	Flour, etc.....	18 .....	.....	.....
S. N. Ford & Co.....	Doors, sash, etc.....	80	Minors	Complied ..
Joseph Seibert	Soap	3 .....	.....	.....
Mills, Ellsworth & Co.....	Buggy shafts, poles, etc.....	26 .....	.....	.....
Schreidt & Miller Co.	Carriage hardware	120	Minors	Complied ..
Humphreys Manufacturing Co...	Pumps	140 .....	.....	.....
Lean & Son.....	Harrows	4 .....	.....	.....
The Baxter Stove Co	Stoves, etc.....	95 .....	.....	.....

MANSFIELD—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
Nail & Ford.....	Doors, sash, etc.....	25	.....	.....	Machinery .....	.....	.....
Jacob Cline.....	Cooperage.....	15	.....	.....	Building .....	.....	.....
Danforth & Proctor	Doors, sash, etc.....	25	.....	.....	Machinery .....	.....	.....
J. A. & W. Massie.....	Cigars.....	6	.....	.....	.....	.....	.....
Weil & Ritchie	Carriages, etc.....	6	.....	.....	.....	.....	.....
News Printing Co.....	Printing and binding.....	20	3	.....	.....	.....	.....
Crawford & Taylor.	Crackers, etc.....	50	25	.....	Former orders .....	.....	Complied.
Union Found'y and Mach'e Shop..	Castings, etc.....	10	.....	.....	.....	.....	.....
Bodine Roofing Co.....	Roofing	11	1	.....	.....	.....	.....
E. J. Forney & Co.....	Linseed oil	10	.....	.....	.....	.....	.....

SANDUSKY COUNTY.

FREMONT.

Koons Bros.....	Flour, etc.....	6	.....	.....	Machinery .....	.....	.....
The Clauss Shear Co.....	Shears	100	5	6	Minors; machinery.....	Complied...	Complied.
N. C. West.....	Hoops.....	7	.....	3	Minors; former orders.....	Complied...	Complied.
Nott & Herty.....	Wagons, carriages, etc.....	8	.....	.....	.....	.....	.....
J. B. Van Dorn.....	Carriages, etc.....	6	.....	.....	.....	.....	.....
D. June & Co.....	Mill machinery, etc.....	75	.....	.....	.....	.....	.....
Van Epps & Cox.....	Flour, etc.....	10	.....	.....	.....	.....	.....
J. P. Moore.....	Carriages, etc	14	.....	.....	.....	.....	.....
C. W. Tschumy	Furniture	7	.....	.....	.....	.....	.....
N. C. West.....	Lumber	15	.....	.....	Former orders.....	.....	Complied.
Fremont Drop Forge Works.....	Carriage hardware.....	25	.....	.....	.....	.....	.....
Fremont Agricultural Works.....	Agricultural implements.....	20	.....	.....	.....	.....	.....
The Herbrand Co.....	Carriage hardware..	8	.....	.....	.....	.....	.....

A. H. Jackson.....	Ladies' bustles, etc..	15	25	4	Minors	Complied ..	.....
Edgerton & Jackson.....	Doors, sash, etc	25	.....	.....	.....	.....	.....
Troman's Extract of Malt Co	Extract of malt.....	10	4	.....	.....	.....	.....

SENECA COUNTY.

*TIFFIN.

Eimsel, Shears & Co.....	Flour, etc.....	11	.....	.....	Machinery ; fire-escape.....	.....	.....
The Ohio Stove Co.....	Stoves	45	.....	2	Minors	Complied ..	.....
Tiffin Union Churn Co.....	Churns, etc.....	45	.....	12	Machinery ; minors	Complied ..	.....
E. S. Rockwell.....	Woolen goods..	40	30	20	Minors	Complied ..	Complied.
W. S. Bacon.....	Flour, etc.....	5	.....	.....	Machinery .....	.....	Complied.
Glick & McCormick.....	Bent work.....	16	.....	.....	" .....	.....	Complied.
Tiffin Agricultural Works.....	Agricultural implements....	120	.....	4	Minors ; machinery.....	Complied ..	.....
Schuman & Co	Lager beer.....	9	.....	.....	Elevator .....	.....	.....
G. W. Keller.....	Flour, etc	4	.....	1	Machinery ; minors	Complied ..	Complied.
Brickner & Ehrenfried	Whisky	2	.....	.....	.....	.....	.....
National Machinery Co.....	Machinery	90	.....	5	Minors ; machinery.....	Complied ..	.....
Tiffin Manufacturing Co.....	Furniture ..	19	.....	.....	Machinery .....	.....	.....
H. S. Wenner.....	Carriages, etc.....	10	.....	.....	.....	.....	.....
Louis Diehl.....	"	9	.....	.....	.....	.....	.....
O'Brian Bros.....	"	90	1	10	Minors ; machinery	Complied ..	.....
Enterprise Manufacturing Co.....	Sash, doors, etc.....	23	.....	.....	Machinery .....	.....	Complied.
H. Hubach.....	Lager beer.....	7	.....	.....	.....	.....	.....
Heabler Bros.....	Feed	4	.....	.....	.....	.....	.....
Loomis & Nyman.....	Machinery	26	.....	.....	Machinery ; building.. ..	.....	Complied ..
J. S. Vannette.....	Experimental work.....	2	.....	.....	.....	.....	.....
M. Weida.....	Cross-cut saws.....	3	.....	.....	.....	.....	.....

FOSTORIA.

Bevington Signal Co.....	Railroad torpedoes.....	50	.....	25	Minors	Complied ..	.....
Fostoria Stave and Barrel Co.....	Staves, barrels, etc.....	60	.....	1	Machinery ; minors	Complied ..	.....
Cunningham & Co.....	Bent work..	30	.....	2	Minors ; mach'y ; elevator...	Complied ..	.....
Green & Heilman.....	Sash, doors, etc.....	10	.....	.....	Machinery .....	.....	.....
Koss, Mohler & Co.....	Saw mill	6	.....	.....	.....	.....	.....
Fostoria Iron Foundry.....	Iron castings.....	5	.....	.....	.....	.....	.....
Koss, Mohler & Co.....	Sash, doors, etc.....	16	.....	1	Minors ; machinery	Complied ..	.....
Walter S. Payne.....	Machine and brass work.....	60	.....	9	Minors ; mach'y ; emery-wh'ls	Complied ..	.....
G. W. & J. H. Campbell.....	Sash, doors, etc.....	12	.....	.....	Machinery .....	.....	.....

STARK COUNTY.

MASSILLON.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
M. A. Brown & Son.....	Planing mill, etc.....	10	2	.....	Machinery .....	.....	Complied.
Massillon Paper Co.....	Paper	35	.....	6	Minors; machinery.....	Complied ..	.....
J. F. Pocock.....	Flour, etc	17	.....	..	Fire-escape; machinery .....	.....	.....
Wetherald & Wells	Window glass	45	.....	..	.....	.....	.....
Massillon Glass Co.....	Glass bottles and jars.....	146	.....	47	Minors	Complied ..	.....
Hess, Snyder & Co.....	Stoves, pumps, etc.....	65	.....	..	.....	.....	.....
Russell & Co.....	Threshing machines; etc	500	.....	5	Machinery .....	.....	.....
Massillon Contrac'g & Building Co	Planing mill	8	.....	.....	" .....	.....	.....
A. H. Wendling & Bro.....	Stoves	13	.....	2	Minors; machinery.....	Complied ..	.....
James Carn & Son	Rolling mill	125	.....	3	Minors	Complied ..	.....
Peter Sailer.....	Cigars.....	45	60	25	"	Complied ..	.....
Massillon Bridge Co.....	Iron bridges, etc.....	70	.....	4	"	Complied ..	.....
Warwick & Justice.....	Flour, etc	21	.....	.....	.....	.....	.....
Massillon Electric Light Co	Electric light	4	.....	.....	.....	.....	.....
CANTON.							
Bucher & Gibbs Plow Co.....	Plows	130	.....	.....	Ventilation; machinery. . .	.....	.....
Jos. Weaver & Son	Doors, sash, etc	30	.....	.....	Machinery .....	.....	.....
James Campbell & Son.....	"	25	.....	3	Minors; machinery	Complied ..	.....
Chieftain Hay Rake Co	Hay rakes.....	30	.....	.....	Machinery .....	.....	.....
Sun Vapor Light and Stove Co....	St. lamps and vapor burners	28	.....	.....	.....	.....	.....
Fernando B. Smith	Hardware	15	3	2	Minors	Complied ..	.....
Canton Roofing Co.....	Iron roofing	18	.....	.....	.....	.....	.....
Universal Plow Co.....	Plows	20	.....	.....	.....	.....	.....
Nobles & Sherlock.....	Iron foundry	18	.....	2	Minors	Complied ..	.....
Elbel & Co	Saddlery hardware	135	1	45	Ventilation; minors	Complied ..	.....

Peerless Reaper Co	Harvesting machinery	150	.....	4	Minors; machinery ..	Complied ..	.....
Canton Saw Works ..	Saws, files, etc	15	.....	2	" ..	Complied ..	.....
Canton Spring Co.....	Carriage and wagon springs..	70	.....	3	" ..	Complied ..	.....
Wills, Lind & Co.....	Doors, sash, etc	29	1	5	" ..	Complied ..	.....
Robbins Bros. & Co.....	Woolen mill.....	3	6	.....	.....	.....	.....
Wrought Iron Bridge Co.....	Iron bridges, etc.....	180	.....	6	Minors	Complied ..	.....
The Miller Manufacturing Co.....	Steam pumps.....	20	.....	.....	.....	.....	.....
John Danner Manufacturing Co..	Book cases	30	.....	.....	Machinery .....	.....	.....
J.C. Lantz	Boxes and bee-hives	18	.....	2	Minors; machinery	Complied ..	.....
The Bolton Steel Co	Merchant steel	145	.....	4	" ..	Complied ..	.....
Canton Hoe and Tool Co.....	Hoes and washboards.....	18	.....	3	" ..	Complied ..	.....
Nobles & Sherlock.....	Founders and machinists.....	60	.....	2	Minors; emery-wheels.....	Complied ..	.....
Joseph Biechele	Soaps	18	7	.....	.....	.....	.....
Whitman & Barnes M'fg Co	Drop forgings, etc	40	.....	4	Minors	Complied ..	.....
Diebold Safe and Lock Co.....	Safes, locks, etc	325	.....	15	Minors; emery-wheels.....	Complied ..	.....
The Harvard Co	Surgical chairs	10	.....	.....	Emery-wheels .....	.....	.....
The Canton Car Co	General foundry work	40	.....	.....	Machinery .....	.....	.....
Gibbs & Ball Plow Co.....	Plows	40	.....	.....	Machinery; emery-wheels ..	.....	.....
E. M. Poorman & Co.....	Machine work	17	.....	.....	.....	.....	.....
The Canton Glass Co.....	Table ware	125	15	35	Minors	Complied ..	.....
Canton Harrow Co	Harrows, etc.....	6	.....	.....	.....	.....	.....
The Ney Manufacturing Co.....	Lawn rakes, etc.....	25	.....	.....	Elevator.....	.....	Complied.
W. R. Harrison & Co.....	Hay and straw cutters	21	1	.....	Machinery .....	.....	.....
Corl & Blake	Flour, etc.....	8	.....	.....	" ..	.....	.....
Canton Novelty Cutlery Co.....	Pocket cutlery	20	3	4	Minors; machinery	Complied ..	.....
Dick's Agricultural Works	Hay cutters, etc.....	35	.....	2	" ..	Complied ..	.....
McCurdy Stove Works	Stoves.....	22	.....	2	Minors; emery-wheels.....	Complied ..	.....
J. Frick & Co.....	Flour, etc	25	.....	.....	Machinery .....	.....	.....
George C. Harvey	"	5	.....	.....	Machinery; fire-escape .....	.....	.....
Gillman Manufacturing Co.....	Coach pads	30	18	.....	Elevator; fire-escape.....	.....	.....
C. Aultman & Co	Harvesting machinery	650	4	8	Elevator; machinery; minors	Complied ..	.....
B. Dannemiller & Sons.....	Coffee and spice mills.....	17	12	.....	Machinery .....	.....	.....

ALLIANCE.

Morgan Engineering Co	Machinery	360	.....	10	Minors; machinery	Complied ..	.....
The Solid Steel Co.....	Steel castings.....	175	.....	10	Min'rs; mach'y; emery-wh'ls	Complied ..	.....
William Murphy.....	Boilers, etc.....	4	.....	.....	.....	.....	.....
G. L. Chapman.....	Machinery	3	.....	.....	.....	.....	.....
J. F. Weybrecht.....	Doors, sash, etc.....	12	.....	.....	.....	.....	.....
F. Baugh.....	Foundry	8	.....	.....	.....	.....	.....

ALLIANCE—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
Elmer E. Cline	Machinery	3	.....	.....	.....	.....	.....
Stanley & Hawkins	Flour, etc.	5	.....	.....	Machinery .....	.....	.....
George N. Yant	Planing mill	6	.....	.....	" .....	.....	.....
SUMMIT COUNTY.							
CUYAHOGA FALLS.							
Sterling Chain and Manuf'g Co ...	Rolling mill	20	.....	2	Minors; machinery; building	Complied ...	.....
Thomas Brothers	Stoneware	16	.....	5	Machinery; minors	Complied ...	.....
Camp & Thompson	Sewer pipe, etc.	50	.....	.....	" .....	.....	.....
Empire Paper Mill	Paper	15	6	3	Seats for females; minors; machinery	Complied ...	.....
Phoenix Paper Mills.	"	10	2	2	Seats for females; elevator; minors	Complied ...	.....
Reeve & Chester	Wire	60	.....	3	Minors; machinery	Complied ...	.....
Glen Wire Manufacturing Co	"	15	.....	1	Machinery; elevator; minors	Complied ...	.....
Sterling Chain and Manuf'g Co ...	Chains	45	.....	5	Minors	Complied ...	.....
John Clayton	Carriages	3	.....	.....	.....	.....	.....
William Barker	Blacksmithing	2	.....	.....	.....	.....	.....
William Blong	Carriages	4	.....	.....	.....	.....	.....
C. Kittleberger	Tannery	9	.....	.....	.....	.....	.....
Hoover & Co	Flour, etc	4	.....	.....	Machinery .....	.....	.....
David Hahn	Cooperage	5	.....	.....	Ventilation .....	.....	.....
George W. Smith	Planing mill	4	.....	1	Minors; machinery	Complied ...	.....
Turner, Vaughn & Taylor	Machinery	40	.....	.....	Machinery .....	.....	.....
The Falls Rivet Co	Rivets, etc.	125	2	6	Minors; machinery	Complied ...	.....
Amer. Foundry and Machine Wks	Machinery	9	.....	.....	Machinery .....	.....	.....

TRUMBULL COUNTY.

WARREN.

W. Packard & Co.....	Planing mill	27	.....	3	Minors; machinery	Complied
R. Bartholomew.....	Building	4	.....	.....	Machinery .....	.....
George T. Townsend.....	Furniture	12	.....	.....	" .....	.....
Trumbull Milling Co	Flour, etc.....	5	.....	.....	.....	.....
The Warren Paint Co.....	Paints.....	15	5	3	Minors	Complied
Drennen & Son	Carriages, etc.....	8	.....	.....	.....	.....
Griswold Linseed Oil Co.....	Linseed oil, etc	20	.....	.....	Machinery .....	.....
Spangenberg, Pendleton & Co.....	Machinery	15	.....	.....	" .....	.....
Reed's Planing Mill.....	Planing mill, etc.....	3	.....	.....	" .....	Complied.
Warren Evaporator Works	Sugar evaporators.....	6	.....	.....	.....	.....
Warren Stave Works.....	Staves, heading, etc.....	30	.....	15	Minors	Complied
S. F. Bartlett.....	Carriages, etc.....	12	.....	.....	.....	.....
James Reed & Son	Stoves.....	10	.....	.....	.....	.....
G. H. Reed & Son.....	Machinery	6	.....	.....	.....	.....
Warren Tube Co.....	Iron and steel tubes.....	150	.....	11	Minors; machinery	Complied
The Winfield Manufacturing Co..	Tinware.....	70	6	10	"	Complied
Aetna Machine Co	Machinery	40	.....	.....	.....	.....
R. P. McClelland.....	Woolen mills	4	.....	.....	.....	.....
R. McBerty.....	Blinds and screens.....	3	.....	.....	.....	.....

NILES.

Thomas Furnace.....	Pig iron	70	.....	.....	.....	.....
Reeves Bros.....	Steam boilers, etc.....	35	.....	3	Minors	Complied
Sykes Iron Roofing Co	Iron roofing	6	.....	.....	.....	.....
Falcon Iron and Nail Co.....	Nails, sheet and skelp iron ..	650	.....	65	Minors; machinery	Complied
Coleman, Shields & Co.....	Skelp and tube iron	150	.....	15	"	Complied
Niles Fire Brick Co	Fire-brick.....	14	.....	5	Minors	Complied

GIRARD.

Morris, Prindle & Co.....	Flour, etc	3	.....	.....	Machinery .....	.....
Trumbull Iron Co.....	Bar iron	250	.....	30	Minors; machinery	Complied
Girard Iron Co.....	Pig iron	200	.....	.....	Building .....	.....
Girard Stove Works.....	Stoves, etc.....	15	.....	1	Minors	Complied
Krehl, Hauser & Co.....	Tannery.....	50	.....	1	"	Complied

TUSCARAWAS COUNTY.

DENNISON.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
Dennison Mills	Flour, etc	2	.....	.....	Machinery .....	.....	.....
P., C. & St. L. R. R. Shops.....	Railroad repairs	686	.....	.....	.....	.....	.....

UHRICHSVILLE.

Everett & Thompson.....	Doors, sash, etc.....	8	.....	.....	Machinery .....	.....	.....
Diamond Fire Clay Co	Sewer pipe, etc	40	.....	.....	.....	.....	.....

NEW PHILADELPHIA.

Criswell & Nagley	Doors, sash, etc.....	12	.....	.....	Machinery .....	.....	.....
New Philadelphia Iron & Steel Co	Sheet iron and steel	250	.....	.....	“ .....	.....	Complied.
Charles Houpt.....	Carriages, etc.....	6	.....	.....	.....	.....	.....
Warner, Lappin & Erwin.....	Doors, sash, etc.....	8	.....	.....	.....	.....	.....
W. M. Hemmeger & Son	Carriages, etc.....	7	.....	.....	.....	.....	.....
Sharp & Son	Machine shop	4	.....	.....	.....	.....	.....
Sharp & Son & Kislig	Foundry	3	.....	.....	.....	.....	.....
New Philadelphia Brewing Co.....	Beer	8	.....	.....	.....	.....	.....
Welty & Knisely	Straw paper	18	.....	4	Minors.....	Complied ..	.....
A. Bates.....	Harness leather.....	3	.....	.....	.....	.....	.....
New Philadelphia Pipe Works Co	Water and gas pipe.....	125	.....	.....	.....	.....	.....
River Mills.....	Flour, etc	10	.....	.....	.....	.....	.....
J. P. Bartles & Son.....	Carriages, etc.....	7	.....	.....	.....	.....	.....

CANAL DOVER.

Cascade Mills.....	Flour, etc	5	.....	.....	Machinery .....	.....	.....
City Mills	“	17	.....	.....	“ .....	.....	.....
Dover Brewing Co	Beer	4	.....	.....	.....	.....	.....

S. Tooney & Co.....	35	.....	.....	.....	.....
Christian Feil	4	.....	.....	.....	.....
Wible, Wenz & Co	7	.....	.....	.....	.....
The Penn Iron and Coal Co.....	75	.....	Former orders.....	.....	Complied.
G. H. Hopkins.....	12	.....	.....	.....	.....
Sugar Creek Salt Works.....	13	.....	.....	.....	.....
Deis, Bissmann, Kurtz & Co	90	Former orders; minors	Complied ..	Complied.
Dover Fire Brick Co	22	Minors.....	Complied
Reeves Iron Co	175

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WAYNE COUNTY.

STERLING.					
The Sterling Wrench Co.....	25	Machinery; emery-wheels..
Amstutz & Co	7	"

CRESTON.					
Creston Coffin Works..	3	.....	Machinery; elevator.....	.....	.....
Creston Milling Co.....	8	.....	Building; machinery .....	.....	.....
Russell Keer.....	4	.....	.....	.....	.....

FREDERICKSBURG.					
A. J. Peterman.....	12	.....	Machinery .....	.....	.....
M. L. Stophlet.....	2	.....	.....	.....	.....
Firestone Bros.....	4	.....	Machinery .....	.....	.....
Immler Bros.....	3	.....	.....	.....	.....
John Lytle.....	2	.....	.....	.....	.....
A. Richards.....	3	.....	.....	.....	.....

WOOSTER.					
M. P. Huston.....	3	2	Minors	Complied ..	.....
W. Young.....	4	.....	.....	.....	.....
Hartman & Durstine.....	25	.....	Machinery .....	.....	.....
E. Thoman.....	5	.....	" .....	.....	.....
Plank Bros.....	10	.....	" .....	.....	.....
Wooster Co-operative Foundry Co.	11	2	Minors.....	Complied ..	.....
Alcock, Donald & Hutton.....	6	.....	.....	.....	.....
W. H. Banker.....	9	.....	.....	.....	.....
Wooster Schuyler Elec. Light Co.	-2	.....	Machinery .....	.....	.....
B. Barrett's Sons & Co.....	13	.....	" .....	.....	.....

Wooster—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
D. C. Curry & Co.....	Planing mill.....	25	.....	.....	Machinery .....	.....	.....
Wooster Brush Works.....	Brushes.....	6	5	3	Minors	Complied ..	.....
Overholt & Co.....	Flour, etc.....	9	.....	.....	Machinery .....	.....	.....
Underwood Whip Co.....	Whips	25	14	2	Minors	Complied ..	.....
J. B. Naftzgar.....	Flour, etc.....	2	.....	.....	.....	.....	.....
Standard Coach Pad Co.....	Coach pads, etc.....	8	3	.....	.....	.....	.....
John Graber.....	Lager beer.....	7	.....	.....	.....	.....	.....
C. K. Bowman.....	Cedar Valley rye.....	2	.....	.....	.....	.....	.....
Smith & Phillips.....	Flour, etc.....	3	.....	.....	.....	.....	.....
Quimby Mill.....	Feed.....	1	.....	.....	.....	.....	.....
Square Hole Auger Co.....	Augers.....	6	.....	.....	.....	.....	.....
Landis & George.....	Cabinet ware	3	.....	.....	.....	.....	.....
D. W. Immel.....	Tannery.....	3	.....	.....	.....	.....	.....
ORRVILLE.							
John Ramsey.....	Planing mill.....	2	.....	.....	Machinery .....	.....	.....
Orrville Milling Co.....	Flour, etc.....	34	.....	.....	" .....	.....	.....
Crystal Burial Case Co.....	Burial cases.....	4	.....	.....	.....	.....	.....
Orrville Planing Mill Co.....	Planing mill.....	15	.....	.....	Machinery .....	.....	.....
Orrville Machine Co.....	Threshing machines	30	.....	.....	Elevator; machinery.....	.....	.....
B. F. Zell..	Machine shop.....	2	.....	.....	.....	.....	.....
Joseph Overton..	Tile	3	.....	.....	.....	.....	.....
F. Dysler & Bro.....	Tannery.....	5	.....	.....	.....	.....	.....

WILLIAMS COUNTY.

BRYAN.

Niederauer Brothers.....	10	.....	Machinery .....	.....
Scott & Powell.....	6	.....	.....	.....
Bryan Plow Co.....	32	.....	.....	.....
Bryan Manufacturing Co.....	32	.....	.....	.....
G. Lockhart.....	3	.....	.....	.....
M. C. Moore.....	4	.....	.....	.....
Bryan Press.....	3	.....	.....	.....
Bryan Democrat.....	3	.....	.....	.....
Halm's Fountain City Brewery...	20	.....	.....	.....
E. Harrington.....	4	.....	.....	.....
Lindesmith Brothers.....	12	.....	.....	.....

WOOD COUNTY.

PEMBERVILLE.

F. D. Sherman	6	.....	.....	.....
Steffen, Menter & Co.....	5	.....	Former orders.....	.....
Dewey Stave Co.....	5	.....	“ .....	.....
Pemberville Milling Co.....	4	.....	.....	.....
Boyer & Muir... ..	6	3	Former orders.....	.....
Hobart & Bolus.....	4	.....	.....	.....

NORTH BALTIMORE.

Aaron Barnd.....	7	.....	Machinery .....	.....
The Dewey Stave Co.....	33	3	Minors	Complied ..
Aaron Barnd.....	4	.....	.....	.....
Paul Hough.....	4	.....	.....	.....
North Baltimore Flour Mill.....	4	.....	.....	.....
Weekly Beacon.....	1	2	.....	.....

BOWLING GREEN.

J. R. Hankey.....	35	.....	Machinery .....	.....
The Lythgoe Glass Co.....	75	7	Minors	Complied ..
Canastata Glass Co.....	1	.....	.....	.....
W. J. Campbell.....	12	.....	.....	.....
John H. Bigelow.....	4	.....	Former orders.....	.....
English & Kirk.....	4	.....	.....	Complied.

BOWLING GREEN—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
Cramer & Reider.....	Flour, etc.....	3	.....	.....	.....	.....	.....
Royce & Koon.....	Grain elevator.....	4	.....	.....	.....	.....	.....
Sentinel.....	Printing.....	7	.....	.....	.....	.....	.....
PERRYSBURG.							
Perrysburg Mill and Elevator.....	Flour and grain.....	3	.....	.....	.....	.....	.....
S. P. Tolman.....	Baskets, etc.....	6	.....	.....	Former orders.....	.....	Complied.
H. M. Hoover.....	Hoops and lumber.....	7	.....	.....	“ .....	.....	Complied.
Journal	Printing.....	2	.....	.....	.....	.....	.....
WYANDOT COUNTY.							
UPPER SANDUSKY.							
Ingard & Smith.....	Planing mill.. ..	8	.....	1	Minors; machinery	Complied ..	.....
John Shealy .....	.....	12	.....	.....	.....	.....	.....
Stevenson Engine Works.....	Machinery . ..	22	.....	1	Minors	Complied ..	.....
Ohio Straw Board Co	Straw boards	35	.....	1	Minors; machinery	Complied ..	.....
J. Gloeser	Tannery.....	3	.....	.....	.....	.....	.....
S. Bechler	Lager beer	5	.....	.....	.....	.....	.....
W. J. Sheby	Flour, etc	2	.....	.....	.....	.....	.....
Kerr Bros .....	.....	4	.....	.....	.....	.....	.....

SECOND DISTRICT.

ATHENS COUNTY.

ATHENS.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
Athens Water Wheel & Mach. Co	Water wheels, etc.....	10					
Geo. Fallon....	Doors, sash, etc.	16		2	Elevator.....		
Guttan & Connett.....	Flooring, etc.....	4					

NELSONVILLE.

M. Krigg & Son	Doors, sash, etc	4					
Steenrod & Posten	Flour and feed	3					
Fremmel & Barman.. ..	Leather	5					
Nelsonville Planing Mill Co	Building material	10					
Nelsonville Machine Co.....	Steam engines, etc	27					

DELAWARE COUNTY.

DELAWARE.

Clark & Young	Builders' supplies.....	15			Machinery		
Delaware Chair Co.....	Chairs	160	30	15	Minors	Complied ..	
E. Snyder	Flour, etc	7			Machinery; building		
Riddle, Graff & Co	Cigars.....	56	40	8	Minors	Complied ..	
Delaware Gazette.....	Newspaper	10	4	5	"	Complied ..	
Geo. H. Aigin & Co	Laundrying	5	3		Machinery		
J. Hessnauer	Cigars.....	15	3	3	Minors	Complied ..	

DELAWARE—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
E. B. Standish	Candies	5	2	.....	.....	.....	.....
G. W. Perry	Sash, doors, etc	5	.....	.....	.....	.....	.....
F. Anthony's Son	Lager beer.....	7	.....	.....	.....	.....	.....
Delaware Co-operative Cigar Co...	Cigars.....	11	1	.....	.....	.....	.....
M. Neville	Carriages, etc	6	.....	.....	.....	.....	.....
L. Miller	"	15	.....	.....	.....	.....	.....
Frank Moyer	"	3	.....	.....	.....	.....	.....
J. A. Broedbeer.....	Cigar boxes.....	5	7	.....	.....	.....	.....
C. Fritchey	Machine work.....	3	.....	.....	.....	.....	.....
C., C., C. & I. R. R. Shops.....	Railroad repairs.....	150	.....	.....	.....	.....	.....
Hill's Novelty Wood-work.....	Patterns, etc.....	3	.....	.....	Machinery .....	.....	.....
Weekly Herald	Newspaper	3	1	.....	.....	.....	.....
J. L. Slough & Son	Flour, etc	3	.....	.....	.....	.....	.....
W. T. L'Estrange	Stoves, etc.....	6	.....	.....	.....	.....	.....
J. Rubrecht	Carpenter work	15	.....	.....	.....	.....	.....

FAIRFIELD COUNTY.

LANCASTER.

E. Becker & Co	Lager beer	14	.....	.....	.....	.....	.....
McAnespie & Co.....	Cloths, yarns, etc	6	2	2	.....	Complied ..	.....
J. B. Orman Bros	Doors, sash, etc	10	.....	.....	.....	.....	.....
Lancaster Gazette.....	Newspaper	9	.....	.....	.....	.....	.....
Peter Miller & Co.....	Clothing	16	46	8	.....	Complied ..	.....
Sifford & Schultz.....	Doors, sash, etc.....	5	.....	.....	.....	.....	.....
Peet & Dennis	Flour, etc	4	.....	.....	.....	.....	.....
Ohio Eagle	Newspaper	7	.....	2	.....	Complied ..	.....

J. R. Mumaugh.....	3		.....	.....	.....	Complied ...	.....	Complied.
Hocking Valley Manufactur'g Co.	90		.....		Minors .....	.....	
Hocking Valley Bridge Co.....	14		.....		.....	.....
C. & M. V. R. R. Shops.....	37		.....		Minors .....	.....	
Beery & Beck.....	24	43	.....		" .....	.....
Temple of Fashion.....	22	60	.....		" .....	.....
A. Bauman.....	12		.....		" .....	.....
Flour, etc								
Agricultural implements								
Bridges.....								
Railroad repairs								
Clothing								
"								
Crackers, etc								

SUGAR GROVE.

J. D. Bumgardner.....	Building material.....	5
A. Schwenke	Leather	6
Schwenke & Emd	Flour, etc	3

BALTIMORE.

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FAYETTE COUNTY.

WASHINGTON C. H.

Business	5	Machinery	Complied.
Burnett Bros	5	Machinery
Coffman & Groves	14	.....	Building; machinery .....	.....	.....
J. M. McCoy.....	4	.....	.....	.....	.....
Ludlow Soap Manufacturing Co...	12	3	.....	.....	.....
Jenney & Manning.....	12	.....	.....	.....	.....
E. G. Tuthill.....	20	3	Minors	Complied ..	.....
Purcell & Nitterhouse.....	8	.....	Building; machinery .....	.....	.....
J. D. Stucky	9	.....	Machinery .....	.....	.....
Jenny & Manning.....	12	.....	.....	.....	.....
Lynn, Resor & Co.....	10	1	.....	.....	.....
White & Ballard	30	25	Minors	Complied ..	.....
P. Hagerty & Sons	18	17	"	Complied ..	.....
Ohio State Register	6	.....	.....	.....	.....
Fayette Republican.....	5	.....	.....	.....	.....
Fayette County Herald.....	7	.....	.....	.....	.....
Jones, Fulton & Co	2	.....	Machinery .....	.....	.....
Grain elevator.....					

FRANKLIN COUNTY.

COLUMBUS.

R. O. Smith & Co.....	Flooring, etc.....	8	.....	.....	.....
Columbus Sewer Pipe Co.....	Sewer pipe.....	79	1	Minors	Complied

COLUMBUS—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
Excelsior Seat Co.....	Buggy seats.....	21	.....	4	Machinery; minors.....	Complied ..	.....
Kilbourne & Jacobs.....	Wheelbarrows, etc.....	25	.....	10	Minors.....	Complied ..	.....
Adjustable Saw Co.....	Saws	4	.....	.....	.....	.....	.....
G. Schreyer.....	Steel skins, stoves, etc.....	4	.....	.....	Building; machinery.....	.....	.....
F. E. Powell.....	Doors, sash, etc.....	6	.....	.....	" .....	.....	.....
B. B. Anderson.....	Cigars, etc.....	12	30	3	Minors	Complied ..	.....
C. Gutheil.....	Building material.....	12	.....	.....	.....	.....	.....
U. S. Carriage Co.. ..	Carriages, etc.....	100	3	6	Minors	Complied ..	.....
F. Farmer.....	Coffee and spices.....	2	2	.....	.....	.....	.....
Scioto Buggy Co.....	Buggies, etc.....	100	.....	3	Minors; building.....	Complied ..	.....
Hildreth & Martin.....	Doors, sash, etc.....	40	.....	.....	.....	.....	.....
John Schenck.....	Patterns, etc.....	4	.....	.....	.....	.....	.....
D. & R. Brown.....	Flour, etc.....	3	.....	.....	.....	.....	.....
E. R. Eaton.....	Machinery	6	.....	.....	.....	.....	.....
Eagle Foundry Co.....	Castings.....	16	.....	.....	.....	.....	.....
G. W. Weinman.....	Steam pumps	6	.....	.....	.....	.....	.....
Hardesty Bros.....	Flour, etc.....	18	.....	.....	.....	.....	.....
E. Bick & Son.	Hides and tallow.....	3	.....	.....	.....	.....	.....
Y. Anderson	Paper	22	10	.....	.....	.....	.....
Columbus Cabinet Co.....	Furniture.....	70	2	.....	.....	.....	.....
A. F. Link.....	Brooms	5	.....	.....	Building.....	.....	.....
C. Emrich.....	Stoves.....	60	.....	.....	.....	.....	.....
Halm, Bellows & Co.....	Furniture.....	125	2	.....	.....	.....	.....
Ohio Furniture Co ...	"	65	.....	.....	.....	.....	.....
Phillip Kinnell... ..	Edge tools.....	7	.....	.....	.....	.....	.....
H. Behren.....	Brooms.....	8	1	3	Minors .....	.....	.....
Butler, Crawford & Co.....	Coffee and spices.....	60	20	.....	.....	Complied ..	.....
Franklin Furnace.....	Pig iron	75	.....	.....	.....	.....	.....

C. H. V. & T. R. R. Shops.....	400	Railroad supplies.....	.....	.....	.....	.....
Lechner Manufacturing Co.....	50	Mining machinery.....	1	3	Minors; building.....	Complied ..
Lechner Manufacturing Co.....	15	Chain department.....	.....	.....	Emery-wheels .....	.....
Pleukharp Caster Co	3	Casters.....	.....	.....	Machinery.....	.....
Door, Sash and Lumber Co	125	Doors, sash, etc.....	5	3	Minors	Complied ..
E. D. & J. C. Howard.....	40	Brooms.....	5	10	Minors; mach'ry; fire-escape ..	Complied ..
Newark Machine Co.....	300	Clover hullers, etc.....	.....	12	Minors	Complied ..
Columbus Machine Co.....	80	Engines and castings.....	.....	.....	.....	.....
Peter Schart.....	8	Machine shop.....	.....	.....	.....	.....
Capital City Carriage Co.....	75	Buggies, etc.....	.....	.....	.....	.....
Thomas Lewis & Son.....	15	Pickled skins, etc.....	.....	.....	.....	.....
Columbus Steam Laundry.....	5	Laundrying.....	15	2	Minors	Complied ..
L. Buchsieb & Son.....	10	Tannery.....	.....	.....	.....	.....
Moehl Bros.....	12	Buggies, etc.....	.....	.....	.....	.....
Miller Oil Co.....	8	Oils .....	.....	.....	.....	.....
E. Shoemaker & Sons.....	6	" .....	.....	.....	.....	.....
Columbus Elevator.....	6	Grain elevator.....	.....	.....	.....	.....
Capital City Steam Laundry.....	3	Laundrying.....	2	.....	.....	.....
George Janton & Sons.....	16	Oils, soap, etc.....	.....	.....	.....	.....
James G. Pulling.....	8	Steam pumps, etc.....	.....	.....	.....	.....
Westbote Printing Co.....	45	Printing.....	1	2	Minors	Complied ..
Ohio Law Journal.....	4	Law Journal.....	.....	.....	.....	.....
O. H. Van Horn.....	1	Tailoring	6	.....	.....	.....
Columbus Cabinet Co.....	15	Upholstering.....	2	1	Minors	Complied ..
Wm. Armbruster.....	1	Hosiery, etc.....	45	5	"	Complied ..
Loeb & Weis.....	10	Cigars, etc.....	7	4	"	Complied ..
S. R. Klotts.....	6	Stogies	100	1	"	Complied ..
Lutheran Book Concern.....	15	Printing and binding.....	10	3	"	Complied ..
Smith & Amann.....	6	Plows.....	.....	.....	Emery-wheels.....	.....
Coleman & Felber.....	20	Bakery, etc.....	1	.....	.....	.....
Trautman & Palmer.....	5	Printing.....	.....	2	Minors	Complied ..
Siebert & Lilley.....	15	Book binding .....	.....	10	"	Complied ..
A. Schwarz Plumbing Co.....	35	Plumbing.....	.....	.....	.....	.....
W. F. Andrus.....	5	Coffee and spices.....	1	.....	.....	.....
Grant & Upton.....	8	Mineral waters.....	.....	.....	.....	.....
Columbus Electrotype Foundry...	5	Electrotyping .....	.....	2	Minors	Complied ..
Sunday Herald.....	13	Newspaper. ....	.....	2	" fire-escape.....	Complied ..
Gazette Printing Co.....	25	Printing.....	1	2	"	Complied ..
S. P. Elliott's Sons.....	6	Bakery .....	.....	.....	Machinery.....	.....
City and Country.....	5	Newspaper	2	2	Minors	Complied ..

COLUMBUS—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
Columbian Printing Co ..	Printing.....	25	1	2	Machinery ; minors.....	Complied...	.....
H. C. Godman	Shoes.....	20	20	6	Minors	Complied...	.....
McMorrow & Miller.....	"	20	20	.....	.....	.....	.....
Daily Times	Daily paper	26	.....	.....	.....	.....	.....
A. E. Futerer	Plumbing, etc	15	.....	.....	.....	.....	.....
Automatic Water Closet Co.....	Water closets	10	.....	.....	.....	.....	.....
M. & E. J. Hays	Buggies, etc	18	.....	.....	.....	.....	.....
Nitschke Bros	Printing.....	18	5	3	Minors	Complied...	.....
M. & D. Krumm ..	Iron fencing.. ..	8	.....	.....	Machinery .....	.....	.....
Scioto Boiler Works.....	Boilers	25	.....	.....	.....	.....	.....
P. Hayden & Co	Foundry and machine shop..	45	.....	2	Minors	Complied ..	.....
Capital City Stove Works	Stoves.....	25	.....	.....	Emery-wheels .....	.....	.....
P. Hayden S. H. Co	Chains	90	.....	3	Minors	Complied...	.....
Jas. G. Pulling & Co	Steam pumps, etc	20	.....	3	"	Complied...	.....
Senter & Lerch	Boxes	15	22	6	Machinery ; minors.....	Complied...	.....
Capital City Boiler Works.....	Boilers	12	.....	.....	" .....	.....	.....
The M. C. Lilley & Co.....	Regalia, etc.....	160	240	20	.....	Complied...	.....
James Ohlen ..	Saws.....	75	.....	.....	.....	.....	.....
Slade & Kelton	Doors, sash, etc	60	.....	.....	.....	.....	.....
J. J. Marvin	"	15	.....	.....	.....	.....	.....
Kelton & Brown	"	15	.....	.....	.....	.....	.....
Reynolds Bros	Files	25	.....	2	Minors	Complied...	.....
W. H. Rhoads & Son	Boats, patterns, etc	3	.....	.....	.....	.....	.....
A. Standish.....	Machine work	15	.....	.....	.....	.....	.....
Andrew Earl	Building work	15	.....	.....	.....	.....	.....
Herschiser & Snyder	Lumber	18	.....	.....	.....	.....	.....
Inter-State Cigar Co	Cigars.....	20	20	4	Minors	Complied...	.....
J. A. Bowden	Laundrying.....	8	20	.....	.....	.....	.....

N. C. Needles.....	Plumbing	5	.....	.....	.....	.....
Wm. Benns & Son	Buggies, etc.....	12	.....	.....	.....	.....
S. B. Hartman	Medicines	12	22	.....	.....	.....
Geo. A. Gawler	Machine work	4	1	.....	.....	.....
Wm. Halley	Plumbing, etc.....	35	.....	3	Minors	.....
W. A. Gill & Co.....	Tin boxes	15	.....	4	.....	Complied ..
J. A. McAuley	Awnings, etc	4	4	.....	.....	.....
J. Rockwell & Co	Printing.....	8	.....	.....	.....	.....
Hann & Adair	"	20	2	1	Minors	Complied ..
B. S. Green	Wood-work.....	4	8	.....	Machinery	.....
W. F. Janeway	Tinware.....	14	.....	.....	.....	.....
J. A. Vandegriff	Trunks, etc	20	.....	.....	.....	.....
Halm & Bellows	Upholstering	8	.....	.....	.....	.....
Columbus Bolt Works	Bolts and forgings.....	125	.....	.....	.....	.....
Reed, Jones & Co	Shoes	35	40	.....	.....	.....
Schaad & Son.....	Metal roofing	5	.....	.....	.....	.....
Peter Schille	Mineral waters	12	.....	.....	.....	.....
Columbus Record.. ..	Newspaper	4	2	.....	.....	.....
Henderson & Harker	Elbows, oil cans, etc	35	.....	6	Minors	Complied ..
Case Manufacturing Co	Mill machinery	150	.....	.....	.....	.....
J. W. Dann Manufacturing Co.....	Bent wood-work	50	.....	.....	.....	.....
J. P. McAllister.....	Feed	2	.....	8	Minors	Complied ..
Columbus Dash and Wagon Co...	Buggies, etc.....	70	.....	.....	.....	.....
M. T. Gleason	Brass foundry	40	7	.....	.....	.....
Excelsior Steam Laundry	Laundrying	3	.....	.....	.....	.....
N. E. Lovejoy	Planing mill	10	.....	.....	.....	.....
Drieterman & Schwartz	Brooms	4	.....	.....	.....	.....
Landon & Co.. ..	Printing.. ..	4	.....	.....	.....	.....
C. E. Morris & Co.....	Architectural iron work	10	.....	.....	Machinery	.....
W. H. Fish	Buggy seats.....	35	.....	.....	"	.....
Schauweker Bros	Leather	50	.....	.....	.....	.....
Columbus Vinegar Works.....	Vinegar	4	.....	.....	.....	.....
Capital City Dairy Co	Butterine	5	.....	.....	.....	.....
Robert Wood.....	Planing mill work.....	8	.....	.....	.....	.....
Columbus Warm Air Furnace Co..	Furnaces	8	.....	.....	.....	.....
M. E. Shilling.....	Foundry.....	10	.....	.....	.....	.....
Ohio Pipe Co.. ..	Iron pipes	175	.....	.....	.....	.....
Steel Skein Works	Wagon skins.. ..	45	.....	.....	.....	.....
Buckeye Buggy Co.....	Buggies, etc.....	125	2	12	Minors	Complied ..
Wassall Fire Clay Co	Fire-brick, sewer pipe, etc ...	40	.....	.....	.....	.....

COLUMBUS—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
Columbus Soap Works.....	Soap	9	6	.....	.....	.....	.....
Bowe & Beggs	Carpets, etc.....	20	10	.....	.....	.....	.....
Davis Piano Chair Co.....	Piano chairs.....	7	.....	3	Minors; building.....	Complied...	.....
J. Pleukharp & Co.....	Table slides, etc	25	.....	4	"	Complied...	.....
Columbus Coffin Co.....	Coffins	40	10	2	" elevator	Complied...	.....
Vulcan Iron Works.....	Founders and machinists.....	70	.....	.....	Building; machinery.....	.....	Complied.
J. R. Hughes.....	Trunks.....	10	.....	.....	.....	.....	.....
Vogelgesang Warm Air Fur'ce Co	Furnaces	15	.....	.....	.....	.....	.....
W. H. Ferguson & Co.. ..	Building, etc.. ..	20	.....	.....	.....	.....	.....
W. J. Elliott.....	Newspaper	12	.....	.....	.....	.....	.....
J. J. Wood Starch Co.....	Starch.....	125	25	.....	Machinery .....	.....	Complied.
Columbus Watch Co	Watches	125	75	20	Minors	Complied...	.....
Ohio Merchant Tailoring Co.....	Tailoring	18	2	.....	.....	.....	.....
S. Lazarus' Sons & Co.....	"	25	10	.....	.....	.....	.....
Wm. Fish & Son.....	Building stone.....	40	.....	.....	.....	.....	.....
W. H. Akin & Son	Mantels and tinware	6	.....	.....	.....	.....	.....
A. Neufang.. ..	Metal roofing	4	.....	.....	.....	.....	.....
Myers Brothers.....	Printing.....	32	1	.....	.....	.....	.....
E. Wood & Co	Malleable iron.....	65	.....	.....	.....	.....	.....
Dundon & Bergin.....	Lumber	15	.....	.....	.....	.....	.....
F. Buck & Son	Brooms	7	.....	.....	.....	.....	.....
W. D. Brickell & Co.....	Newspaper	55	2	3	Minors	Complied...	.....
Snyder, Chaffee & Co.....	Candies	33	20	20	"	Complied...	.....
Columbus Bridge Co.....	Bridges.....	12	.....	1	"	Complied...	.....
A. O. Jones & Co.....	Tile and ditch pipes.....	12	.....	.....	.....	.....	.....
Kessler Dry Yeast Co.....	Dry yeast	3	.....	.....	.....	.....	.....
Munson & Hayden.....	Malleable iron.....	110	.....	10	Minors	Complied...	.....
Fish Pressed Brick Co.....	Brick.....	12	.....	.....	Building .....	.....	.....

Columbus Portland Cement Co.....	Cement	25	.....	.....	Machinery .....	.....
Wise, Buck & Co.....	Brooms.....	3	.....	.....	.....	.....
R. C. Schmertz & Co.....	Window glass.....	60	.....	.....	.....	.....
Thomas Ross.....	Soaps	5	.....	.....	.....	.....
F. C. Janton & Co.....	Soaps and oils.....	7	.....	.....	.....	.....
Fred. Arukrott.....	Butchering	8	.....	.....	.....	.....
McDonald Brothers.....	Molding work	7	.....	.....	.....	.....
Wittmeyer Brothers..	Building and cut stone.....	15	.....	.....	Machinery .....	.....
Peter Schlapp.....	Building material	7	.....	.....	" .....	.....
P. Hayden & Co.....	Iron and hames	153	15	10	Machinery; elevator; minors ..	Complied ..
J. H. & F. A. Sells.....	Harness, etc.....	17	.....	.....	.....	.....
F. R. Winget.....	Cigars..	35	45	40	Minors	Complied ..
Columbus Cigar Manufact'ng Co..	"	30	50	15	"	Complied ..
G. A. Marquardt	"	5	.....	1	"	Complied ..
Eisel & Armbruster	"	5	.....	2	"	Complied ..
Columbus Knitting Co	Hosiery	2	25	4	"	Complied ..
Ohio Plating Works.....	Metal plating.....	10	.....	1	"	Complied ..
Warren Sharf Asphaltum Co.....	Asphaltum	20	.....	.....	Machinery; building.....	.....
Kilbourne & Jacobs Manuf'g Co ..	Wh' barr's, road scrapers, etc ..	430	.....	25	Minors	Complied ..
L. W. Rose.....	Ropes and rope halters.....	8	.....	4	"	Complied ..
Zipf Brothers.....	Carriages and jobbing.....	4	.....	.....	.....	.....
W. R. Kinnear	Galvanized iron work	25	.....	2	Minors	Complied ..
Ohio Tool Co.....	Tools.....	60	.....	10	"	Complied ..
N. Schlee.....	Beer and malt.....	45	.....	.....	Machinery .....	.....
Born & Co.....	"	40	.....	.....	Former orders.....	Complied.
L. Hoster Brewing Co.....	"	95	.....	.....	.....	.....
John Immel & Son.....	Carriages, etc	45	.....	2	Minors	Complied ..
Col. Brass and Steam Pipe Works	Steam and gas fitting.....	10	.....	.....	.....	.....

WESTERVILLE.

Public Opinion.....	Newspaper	7	.....	3	Minors	Complied ..
H. L. Bennett.....	Stump pullers, etc.....	5	.....	.....	.....	.....
W. S. Clymer ..	Flour, etc.....	3	.....	.....	.....	.....

GALLIA COUNTY.

GALLIPOLIS.

Morrison & Betz.....	Lumber ..	7	.....	.....	.....	.....
Gallipolis Steam Tannery.....	Leather	14	.....	.....	.....	.....
Anchor Mill.....	Flour, etc.....	6	.....	.....	.....	.....

GALLIPOLIS—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
E. S. Aleshire	Meal and grain.....	3			.....	.....	.....
Lindle Mill.....	Flour, etc.....	4			.....	.....	.....
Bush, Son & Miller	Meal, feed, etc.....	3			.....	.....	.....
Jas. Mullineaux.....	Doors, sash, etc.....	24			.....	.....	Complied.
Vanden & Son.....	Carriages.....	6			.....	.....	.....
Martin McHale.....	Brooms	15		4	Minors.....	Complied..	.....
Fuller & Hutsinpillar.....	Furniture	60		15	"	Complied..	.....
The Fuller & Hutsinpillar Co ...	Finishing furniture.....	43	1	20	"	Complied..	.....
A. A. Lyon.....	Carriages, etc.....	4		2	"	Complied..	.....
Treasure Stove Works.....	Stoves, etc.....	20		1	"	Complied..	.....
Kling & Co.....	"	20		3	"	Complied..	.....
T. S. Ford & Co.....	Flooring, etc.....	12			Machinery .....	.....	.....
Enos, Hil' & Co.....	Machinery, etc.....	25			Building; machinery.....	.....	.....
Gatewood Lumber Co.....	Furniture, etc.....	20		2	Minors; machinery.....	Complied...	.....

GUERNSEY COUNTY.

QUAKER CITY.

Hall & Bauer.....	Flour, etc.....	4			Machinery .....	.....	.....
Quaker City Planing Mill	Doors, sash, etc	8			" .....	.....	.....
Quaker City Window Glass Co ...	Window glass.. ..	70		15	Minors	Complied...	.....
Max Bros	Cigars.....	6	4	3	"	Complied...	.....

CAMBRIDGE.

Simons Bros	Foundry	8			.....	.....	.....
E. McColium	Buggies, etc	3			.....	.....	.....
C. & M. Railway Shops.....	Railroad repairs	50			.....	.....	.....

Guernsey Times	6	2	.....	.....	.....
Cambridge Chair Factory	25	30	.....	Machinery; minors; elevator	.....
Cambridge City Mills	6	.....	.....	"	.....
Hoyle & Scott.....	10	.....	.....	Building; machinery	.....
Cambridge Roofing Co	25	1	2	Machinery; minors.....	Complied...

CUMBERLAND.

Geo. McHenry.....	3	.....	.....	.....	.....
Johnson & Bay	3	.....	1	Minors	Complied ..
Cumberland News	2	.....	.....	.....	.....
S. Shadwell.....	4	.....	.....	.....	.....
W. H. Stevens.....	3	.....	.....	Machinery	.....
J. E. McClelland.....	4	.....	.....	"	.....

HOCKING COUNTY.

LOGAN.

C., H. V. & T. R. R. Shops.....	50	.....	.....	Ventilation .....	.....
Logan Manufacturing Co	41	.....	.....	.....	.....
Frank Kesler.....	8	.....	.....	.....	.....
Motherwell Iron and Steel Co	49	.....	3	Minors	Complied ..
J. E. Fritch.....	6	3	.....	.....	.....
Hocking Valley Fire Brick Co.....	7	.....	.....	.....	.....
Zslech & McLean	35	.....	.....	.....	.....

JACKSON COUNTY.

JACKSON.

Star Furnace Co	35	.....	.....	.....	.....
Tropic Iron Co.....	30	.....	.....	.....	.....
Jackson Mill and Lumber Co.....	10	.....	.....	.....	.....
Peters & Huntsinger.....	2	.....	.....	.....	.....
Rough Leather Co.....	13	.....	.....	.....	.....
Globe Iron Co.....	30	.....	.....	.....	.....
B. Gray	5	.....	.....	.....	.....
Jacob W. Bryan	3	.....	.....	.....	.....
Franklin Woolen Mills.....	5	5	1	Minors	Complied ..
Franklin Mill Co.....	5	.....	.....	.....	.....
John Dauber	4	.....	.....	.....	.....

JACKSON—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
Jackson Journal	Newspaper	6	.....	.....	.....	.....	.....
Jackson Herald.....	"	4	1	.....	.....	.....	.....
Jackson Standard	"	5	1	.....	.....	.....	.....
May Bros	Cigars	3	.....	.....	.....	.....	.....
WELLSTON.							
Milton Furnace	Pig iron	40	.....	.....	.....	.....	.....
Wellston F'dry & Machine Works	Foundry and machine shop..	40	.....	.....	.....	.....	.....
John D. Davis	Miners' augers, wagons, etc..	3	.....	.....	.....	.....	.....
Wellston Furnace.....	Pig iron	35	.....	4	Minors	Complied..	.....
Gooding, Edwards & Co.....	Doors, sash, etc.....	9	.....	.....	Machinery .....	.....	Complied.
Western Steel Nail Mill	Steel nails ..	150	.....	25	Minors	Complied...	.....

KNOX COUNTY.

MT. VERNON.							
C., A. & C. R. R. Shops	Railroad repairs	90	.....	1	Minors	Complied...	.....
E. L. Black.....	Grates, plows, etc.....	5	.....	.....	.....	.....	.....
The Cooper Manufacturing Co....	Engines and saw mills.....	50	.....	.....	.....	.....	.....
Kokosing Mill	Flour, etc.....	14	.....	.....	.....	.....	.....
Mt. Vernon Bridge Co	Iron bridges.....	75	.....	.....	.....	.....	.....
J. McDowell.....	Planing mill.....	3	.....	1	Minors	Complied...	.....
Mt. Vernon Linseed Oil Co.....	Linseed oil, etc.....	7	.....	.....	.....	.....	.....
H. Graff.....	Carriages, etc.....	6	.....	.....	.....	.....	.....
Samuel Sanderson	"	5	.....	.....	.....	.....	.....
J. Martin	Sawing lumber	3	.....	.....	.....	.....	.....
J. Back.....	Furniture	5	7	2	Minors	Complied...	.....
Mt. Vernon Republican.....	Newspaper ..	6	2	.....	.....	.....	.....

Democratic Banner	4	.....	.....	.....	.....
Eagle Mills.....	5	.....	.....	.....	.....
Banning & Willis.....	12	.....	.....	.....	.....
C. & G. Cooper & Co	175	.....	.....	.....	.....

8

CENTERBURG.

Horn Bros.....	3	.....	Machinery .....	.....	.....
Centerburg Manufacturing Co....	5	.....	" .....	.....	.....
Centerburg Gazette.....	3	.....	Minors.....	Complied...	.....
J. E. Landrum & Co.....	10	.....	" .....	Complied...	.....

2Ex.D.

LAWRENCE COUNTY.

IRONTON.

Witman Stove Co.....	55	.....	3	.....	Minors; machinery.....	Complied...
Stan'rd Gas Retort & Fire-Brick Co.	30	.....	12	.....	" .....	Complied...
Sarah Furnace.....	30	.....	.....	.....	.....	.....
Aetna Iron Works.. ..	72	.....	.....	.....	.....	.....
Iron Railway Co	24	.....	.....	.....	.....	.....
Ironton Fire-Brick Works.....	35	.....	7	.....	Minors.....	Complied...
Eagle Brewery.....	10	.....	1	.....	" .....	Complied...
Ironton Carriage Works.....	5	.....	.....	.....	.....	.....
Lambert Bros. & Co.	57	.....	2	.....	Minors	Complied...
Bellfont Keg Works.....	37	.....	21	.....	" .....	Complied...
R. S. Dupuy.....	8	.....	.....	.....	Machinery; elevator.....	.....
R. Tyler & Sons.....	3	.....	.....	.....	" .....	.....
Lawrence Iron and Steel Co.....	400	.....	5	.....	Minors	Complied...
Bellfont Iron Works.....	350	.....	20	.....	" .....	Complied...
Ironton Furnace Co.....	50	.....	.....	.....	.....	.....
Newman & Spanner.....	52	.....	.....	.....	Machinery .....	.....
George A. Bell.....	5	.....	.....	.....	" .....	.....
Moore Bros.. ..	8	12	15	.....	Minors	Complied...
Ironton Register.....	6	.....	1	.....	" .....	Complied...
Phillips Buggy Co	9	.....	.....	.....	.....	.....
Kelly Nail and Iron Co.....	400	.....	.....	.....	.....	.....
Bellfont Furnace.....	60	.....	.....	.....	.....	.....
J. G. Apel.....	9	.....	.....	.....	.....	.....
Ironton Soap Works.....	4	.....	.....	.....	.....	.....
The Foster Stove Co.....	36	.....	.....	.....	.....	.....
R. N. Fearer.....	15	.....	.....	.....	.....	.....
C. H. Crowell.....	10	.....	.....	.....	.....	.....

LICKING COUNTY.
NEWARK.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
Ball & Ward.....	Carriages.....	16	.....	.....	.....	.....	.....
The Edward H. Everett Co.....	Jars and bottles.....	180	.....	50	Minors.....	Complied...	.....
James E. Thomas.....	Machinery	100	.....	10	"	Complied...	.....
The Scheidler Machine Works...	Engines, etc.. ..	45	.....	1	"	Complied...	.....
S. G. Foos.....	Carriages.....	8	.....	.....	.....	.....	.....
Newark Paper Co.....	Wrapping paper.....	14	6	.....	.....	.....	.....
J. H. McNamar.....	Engines, etc.....	25	.....	.....	.....	.....	.....
Levi Ferguson & Son.....	Builders.....	18	.....	.....	.....	.....	.....
Garber & Vance.....	Doors, sash, etc.	20	.....	.....	.....	.....	.....
N. M. Lamb.....	Flour, etc.....	4	.....	.....	.....	.....	.....
John Simpson.....	Soap	4	.....	.....	.....	.....	.....
B. & O. R. R. Shops.....	Railroad repairs.....	621	3	.....	.....	.....	.....
Elevator Ditching Machine Co.....	Ditching machines.....	15	.....	.....	.....	.....	.....
Nutter & Haynes.....	Doors, sash, etc.....	5	.....	.....	.....	.....	.....
Newark American.....	Newspaper	12	.....	3	Minors.....	Complied...	.....
Bourner & Phillips.....	Builders, etc.....	21	.....	.....	Machinery .....	.....	.....
W. W. Root.....	Meal and feed.....	3	.....	.....	" elevator .....	.....	.....
D. Thomas & Co.....	Flour, etc.. ..	4	.....	.....	" .....	.....	.....
Moser & Wehrle.....	Stoves.....	40	.....	3	" minors	Complied...	Complied.
T. H. Holman.....	Wagons, etc.....	15	.....	2	Minors; building; elevator..	Complied...	.....
Loudenslager & Sites.....	Flour, etc.....	8	.....	.....	Machinery; building.....	.....	.....
Excelsior Mill.....	"	4	.....	.....	" .....	.....	.....
Charles Kibler, Jr., & Co.....	Stoves, etc.....	50	.....	.....	" .....	.....	.....
PATASKALA.							
James Brooke & Co.....	Flooring, etc.....	3	.....	.....	Machinery .....	.....	.....
S. Davis.....	Flour, etc	2	.....	.....	" .....	.....	.....

MUSKINGUM COUNTY.

ROSEVILLE.

Henry Combs	2	.....	.....	.....	.....	.....	.....	.....	.....
Brough Brown	4	.....	.....	.....	.....	.....	.....	.....	.....
J. B. Owens	12	2	.....	.....	.....	.....	.....	.....	.....
W. B. Lowery	5	.....	.....	.....	.....	Former orders.	.....	.....	Complied.
W. B. Brown	3	.....	.....	.....	.....	"	.....	.....	Complied.
G. W. Walker	4	.....	.....	.....	.....	.....	.....	.....	.....
H. Sowers	3	.....	.....	.....	.....	.....	.....	.....	.....
Jas. L. Weaver	3	.....	.....	.....	.....	.....	.....	.....	.....
John Burton	2	.....	.....	.....	.....	.....	.....	.....	.....
Kildow, Dugan & Co.	8	.....	.....	2	.....	Minors .....	.....	Complied	.....
Henry Combs	2	.....	.....	.....	.....	Machinery .....	.....	.....	.....
J. B. Owens	19	.....	.....	4	.....	Minors; machinery .....	.....	Complied,	.....
W. B. Lowery	6	.....	.....	.....	.....	Former orders.....	.....	.....	Complied.
W. A. Hurl.....	4	.....	.....	.....	.....	.....	.....	.....	.....
Dollison & Parrott	5	.....	.....	.....	.....	.....	.....	.....	.....

NEW CONCORD.

M. A. Brown	5	.....	.....	.....	.....	Machinery .....	.....	.....	.....
Jos. Porter	5	.....	.....	1	.....	Minors .....	.....	Complied	.....
Robert Speer	3	.....	.....	.....	.....	.....	.....	.....	.....
H. O. Wylie	3	.....	.....	.....	.....	.....	.....	.....	.....
Given & Co	4	1	.....	1	.....	Minors .....	.....	Complied	.....

ZANESVILLE.

D. Palmer & Son	2	.....	.....	.....	.....	.....	.....	.....	.....
Hook Bros. & Aston.....	10	.....	.....	.....	.....	.....	.....	.....	.....
Samuel Bowman.....	5	.....	.....	.....	.....	.....	.....	.....	.....
Jones & Co.....	11	.....	.....	.....	.....	.....	.....	.....	.....
Excelsior Planing Mill	25	.....	.....	2	.....	Minors .....	.....	Complied	.....
H. N. Gooden	30	.....	.....	4	.....	"	.....	Complied	.....
England Bros	3	5	.....	2	.....	"	.....	Complied	.....
Zane Foundry	12	.....	.....	.....	.....	.....	.....	.....	.....
McCarty & King.....	2	.....	.....	.....	.....	.....	.....	.....	.....
L. D. Dillon Soap Co.....	4	.....	.....	2	.....	Machinery.....	.....	.....	.....
Muskingum Coffin Co.....	40	6	.....	.....	.....	"	.....	.....	.....
Kearns Gorsuch Glass Co	300	.....	.....	80	.....	Minors .....	.....	Complied	.....
Gary Bros. & Silvey.....	40	.....	.....	10	.....	"	.....	Complied	.....

ZANESVILLE—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
Beaumont & Blankenbuhler.....	Flour, etc	5	1	..	.....	.....	.....
Zanesville Woolen Manufact'g Co.	Blankets, jeans, etc	31	32	10	Minors	Complied...	.....
A. Kimble.....	Buggy gearing.....	25	...	5	"	Complied...	.....
Hoover & Allison	Cordage, etc.....	39	46	50	"	Complied...	.....
Hatton Stove Foundry.....	Stoves, etc.....	30	...	.....	.....	.....	.....
Zanesville Stoneware Co	Stoneware	18	.....	2	Minors	Complied...	.....
C. H. Powell.....	Wagon, etc., repair shop	4	.....	.....	.....	.....	.....
S. A. Weller.....	Flower pots, etc.....	9	.....	3	Minors	Complied...	.....
W. B. Hubbell.....	Cigars.....	20	7	2	"	Complied...	.....
A. Worstall	"	7	9	2	"	Complied...	.....
Mader Bros.....	Carriages, etc.....	10	.....	.....	.....	.....	.....
The Griffith & Wedge Co.....	Mining machinery, etc	100	.....	5	Minors	Complied...	.....
Peter Keck.....	Carriages, etc.....	8	.....	.....	.....	.....	.....
Jones & Abbott.....	Stoves, etc.....	60	.....	1	Minors	Complied...	.....
Muskingum Steam Laundry.....	Laundrying	4	6	.....	.....	.....	.....
J. Smith & Son	Spokes, handles, etc	14	.....	.....	Machinery .....	.....	.....
Zanesville Electric Light Co.....	Electric light.....	4	.....	.....	" .....	.....	.....
J. B. Mercer & Co	Hosiery	20	180	40	Minors	Complied...	.....
Zane Tobacco Co	Tobacco	20	25	15	"	Complied...	.....
P. C. Shubach	Wagons, etc	6	.....	.....	.....	.....	.....
C. J. Brenholts	Paper boxes	3	7	1	Minors	Complied...	.....
J. L. Christ.....	Wagons, etc.....	3	.....	.....	.....	.....	.....
Duer & Schuman.....	Buggies, etc.....	5	.....	.....	.....	.....	.....
American Encaustic Tiling Co.....	Tiling.....	160	30	.....	.....	.....	.....
A. Merkle.....	Beer.....	7	.....	.....	.....	.....	.....
H. F. Stern.. ..	Canned fruit	7	63	45	Minors	Complied...	.....
Gruel & Bischoff	Leather	13	.....	.....	.....	.....	.....
Schultz & Co.....	Soap	50	25	.....	.....	.....	.....

McElroy Bros.....	7	Cigars.....	7	.....	.....	.....	.....	.....	.....
W. H. Allen.....	3	Iron fence.....	3	.....	.....	.....	.....	.....	.....
John C. Shryock.....	4	Printing.....	4	.....	.....	.....	.....	.....	.....
E. R. Sullivan.....	11	Printing and binding.....	11	4	1	Minors.....	.....	Complied	.....
Muskingum Printing Co.....	6	Printing.....	6	1	1	".....	.....	Complied	.....
Times-Recorder.....	19	".....	19	.....	3	".....	.....	Complied	.....
C. Staltzenbach & Sons.....	54	Confectionery.....	54	20	.....	Former orders.....	.....	.....	Complied.
L. D. Sandle.....	3	Printing and binding.....	3	1	1	Minors.....	.....	Complied	.....
Irville & Gaumer.....	11	Newspaper.....	11	2	2	".....	.....	Complied	.....
Gus. Wylins.....	3	Upholstering.....	3	.....	.....	.....	.....	.....	.....
Zanesville Steam Laundry.....	4	Laundrying.....	4	4	.....	.....	.....	.....	.....
Central Oil Co.....	18	Oils, etc.....	18	12	3	Minors.....	.....	Complied	.....
Daily Courier.....	60	Printing.....	60	.....	.....	.....	.....	.....	.....
Shinnick, Woodside & Gibbons Manufacturing Co.....	40	Stoves, etc.....	40	.....	.....	Machinery.....	.....	.....	.....
Herdman, Harris & Co.....	15	Doors, sash, etc.....	15	3	3	Minors; machinery.....	.....	Complied	.....
Pettit & Strait.....	25	Bread, cakes, etc.....	25	6	.....	Machinery.....	.....	.....	.....
Novelty Paper Mill.....	39	Paper.....	39	1	.....	.....	.....	.....	.....
Duvall Engine Co.....	7	Engines, etc.....	7	.....	.....	.....	.....	.....	.....
Hoffman Bros. & Co.....	3	Wagons, etc.....	3	.....	.....	.....	.....	.....	.....
Levi Miller.....	9	Sawing lumber.....	9	.....	.....	.....	.....	.....	.....
Zinneister & Linser.....	100	Beer.....	100	.....	20	Minors.....	.....	Complied	.....
T. B. Townsend & Co.....	100	Pressed brick.....	100	1	.....	.....	.....	.....	.....
F. J. L. Blandy.....	3	Engines, etc.....	3	.....	.....	.....	.....	.....	.....
James L. McElroy.....	21	Cigars.....	21	.....	.....	.....	.....	.....	.....
B. Z. & C. R. R. Shops.....	120	Railroad repairs.....	120	.....	.....	.....	.....	.....	.....
Ohio Iron Co.'s Blast Furnace.....	325	Pig iron.....	325	.....	.....	.....	.....	.....	.....
Ohio Iron Co.....	4	Iron and steel rails.....	4	.....	.....	.....	.....	.....	.....
Keen & Co.....	150	Mineral water.....	150	.....	.....	.....	.....	.....	.....
Brown Manufacturing Co.....	15	Wagons, harrows, etc.....	15	.....	2	Minors; machinery.....	.....	Complied	.....
S. W. Clark.....	.....	Doors, sash, etc.....	.....	.....	.....	.....	.....	.....	.....

MEIGS COUNTY.

MIDDLEPORT.

German Furniture Co.....	65	Furniture.....	65	.....	8	Minors.....	.....	Complied	.....
G. McManigal & Co.....	20	Pressed brick.....	20	.....	2	".....	.....	Complied	.....
S. D. Webb & Son.....	3	Flooring, etc.....	3	.....	1	".....	.....	Complied	.....
Standard Nail and Iron Co.....	300	Nails and iron.....	300	.....	110	".....	machinery ..	Complied	.....
Vulcan Machine Co.....	18	Machine shop.....	18	.....	.....	.....	.....	.....	.....

MIDDLEPORT—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
Ohio Machine Co.....	Machine shop	20	.....	.....	.....	.....	.....
Middleport Flour Co.....	Flour, etc	15	.....	.....	.....	.....	.....
Swift Manufacturing Co.....	Nails	43	.....	20	Minors	Complied...	.....
POMEROY.							
Geyer & Newton.....	Flour and meal.....	12	.....	1	Minors	Complied...	.....
Coal Ridge Salt Co.....	Salt	60	.....	.....	.....	.....	.....
Buckeye Salt Co.....	"	37	.....	.....	.....	.....	.....
McKnight & Fisher.....	Wagons	5	.....	.....	.....	.....	.....
Excelsior Salt Works	Salt..	50	.....	.....	.....	.....	Complied.
Rolling Mill Brewing Co.....	Beer	11	.....	.....	Former orders.....	.....	.....
Telegraph.....	Newspaper	6	2	.....	.....	.....	.....
Frank Glockner	Flour, etc	5	.....	.....	.....	.....	.....
Pomery Salt Works.....	Salt	25	.....	.....	.....	.....	.....
Pfarr & Genheimer	Flooring, etc.....	4	.....	.....	.....	.....	.....
J. C. Probst & Son.....	Furniture.....	22	.....	2	Building .....	.....	.....
Pomeroy Iron and Steel Co.....	Iron	300	.....	25	Machinery; building; minors	Complied...	.....
John S. Davis & Son.....	Doors, sash, etc.....	19	.....	.....	Minors; machinery.	Complied...	.....
Pomeroy Machine Co.....	Engines, etc.....	9	.....	1	Elevator.....	.....	Complied.
					Minors ..	Complied...	.....

MARION COUNTY.

MARION.

S. E. DeWolf	Grain and feed	2	.....	.....	Machinery ; building .....	.....	.....
Huber Manufacturing Co.....	Engines, separators, etc	140	.....	10	Minors	Complied...	.....
B. J. Camp	Wood-work.....	4	.....	.....	Machinery .....	.....	.....
Dale & Adams.....	Stoves, etc	8	.....	3	Minors	Complied...	.....
Marion Steam Shovel Co	Steam shovels, etc... ..	45	1	4	"	Complied...	.....

A. La Tourette.....	Brick and tile machines.....	10	.....	.....	.....	Complied.
Bryan, Prendergast & Co.....	Doors, sash, etc	15	.....	Former orders.....	.....	.....
Rieber Flour Mill Co.....	Flour, etc.....	3	.....	.....	.....	.....
Gregory & Lears	"	9	.....	.....	.....	.....
D. H. Lears.....	Sash, blinds, etc.....	13	.....	.....	.....	.....
W. H. McClain	Laundrying	2	.....	.....	.....	.....

MADISON COUNTY.

PLAIN CITY.

Plain City Paper Mills	25	.....	3	Minors; machinery	Complied ...
W. J. Ballinger & Son	4	.....	.....	Machinery ..	.....
Barlow, Kent & Co	22	.....	1	Minors; elevator; machinery ..	Complied ...
H. Harper & Co	5	.....	.....	.....	.....
McCune & Beard	7	.....	.....	.....	.....
E. H. Dry	6	.....	.....	.....	.....
Harn, Cole & Co	7	.....	.....	.....	.....
Andrew Kahler	3	.....	.....	.....	.....
Beach, Doming & Co	5	.....	.....	.....	.....
Wrapping paper					
Flour, etc.					
Tables					
Carriages, etc					
Sawing lumber					
Carriages, etc					
Handles, spokes, etc					
Grain elevator, etc					
Planing mill, etc					

LONDON.

J. B. Van Wagoner	3	.....	Machinery .....	.....	.....
E. R. Florence.....	7	.....	“ minors .....	.....	Complied ...
G. W. Shank	30	.....	Minors .....	.....	Complied ...
A. J. Boiles	7	.....	“ .....	.....	Complied...
Frederick Placier	5	.....	.....	.....	.....
W. M. Jones.....	12	.....	.....	.....	.....
Wm. Holland.....	20	.....	Minors .....	.....	Complied ...
Madison Democrat.....	7	.....	“ .....	.....	Complied...
E. J. Gould & Co	5	.....	.....	.....	.....
The Vigilant.....	3	.....	.....	.....	.....
London Times.....	6	.....	.....	.....	.....
The Enterprise	4	.....	.....	.....	.....

MORGAN COUNTY.

M'CONNELSVILLE.

James Bain.....	7	.....	.....	.....	.....
Wagons and buggies.....	15	.....	3	Minors.....	Complied.....
Cigars.....					
George Hann.....					

McCONNELSVILLE—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
McConnelsville Door & Sash Fac'y	Doors, sash, etc.	8	.....	.....	.....	.....	.....
McConnelsville Roller Flour Mills	Flour, etc.	5	.....	.....	Machinery; building.....	.....	.....
E. M. Standish.....	"	4	.....	.....	Elevator; building.....	.....	.....
MALTA.							
Hiram McGraff & Co.....	Flooring, etc.....	5	.....	.....	.....	.....	.....
G. L. Hoffman & Sons.....	Harness leather	12	.....	.....	.....	.....	.....
Brown-Manly Plow Co.....	Plows and castings.....	140	.....	.....	Former orders.....	.....	Complied.
A. M. Dunsmore	Furniture	5	.....	.....	Machinery .....	.....	.....

MONROE COUNTY.

WOODSFIELD.

Gazette	Newspaper	3	1	.....	.....	.....	.....
Spirit of Democracy.....	"	4	.....	.....	.....	.....	.....
George Richner & Son.....	Flour, etc.....	4	.....	.....	Former orders.....	.....	Complied.
Helbling & Steohr.....	Doors, sash, etc.....	5	.....	.....	Machinery .....	.....	.....

MORROW COUNTY.

MT. GILEAD.

The Anchor Milling Co.	Flour, etc.....	4	.....	.....	Machinery .....	.....	.....
Demson Bros.....	Drain tile.. ..	6	.....	.....	.....	.....	.....
Morrow County Creamery.....	Butter.....	3	.....	.....	.....	.....	.....
Burgoine & Wilson.....	Carriages, etc.....	12	.....	2	Minors.....	Complied...	.....
Crowe Spring Co.....	Buggy springs	7	.....	.....	Former orders.....	.....	Complied.
E. F. Cooper & Son.....	Foundry and repair shop.....	3	.....	.....	.....	.....	.....

Levering & Cover.....	2	.....	.....	.....	.....	.....
H. Dunn.....	5	.....	.....	.....	.....	.....
Mt. Gilead Building Co	12	.....	.....	.....	.....	.....
McGowen & Co.....	4	.....	.....	.....	.....	.....
Duncan & Co.....	5	.....	.....	.....	.....	.....
A. E. Chase.....	2	.....	.....	.....	.....	.....
Morrow County Sentinel.....	5	.....	.....	.....	.....	.....
Union Register.....	3	.....	.....	.....	.....	.....
Hydraulic Press Co.....	15	1	2	.....	.....	Complied...

CARDINGTON.

J. S. Peck.....	10	.....	.....	.....	.....	.....
Cardington Independent.....	4	.....	.....	.....	.....	.....
R. T. Mills.....	2	.....	.....	.....	.....	.....
Wood, Morey & Co.....	10	.....	2	.....	.....	Complied...
W. W. Hartman.....	15	.....	.....	.....	.....	.....
Hercules Manufacturing Co.....	10	.....	.....	.....	.....	.....
Gray Bros & Co.....	2	.....	.....	.....	.....	.....
Dawson, Wherry & Co.....	6	.....	.....	.....	.....	.....

NOBLE COUNTY.

SUMMERFIELD.

Samuel Osborne	4	.....	.....	.....	.....	.....
R. S. O'Neil	5	.....	.....	.....	.....	.....
Summerfield Flouring Mill	5	.....	.....	.....	.....	.....

CALDWELL.

Henry Schafer.....	2	4	1	.....	.....	Complied...
Republican.....	3	1	1	.....	.....	Complied...
Press.....	6	.....	.....	.....	.....	.....
P. H. Berry.....	4	.....	.....	.....	.....	.....
L. H. Berry & Co	2	15	6	.....	.....	Complied...
S. Mills & Sons	12	.....	.....	.....	.....	.....
Bush & McVay	23	30	4	.....	.....	Complied...
T. H. Morris.....	3	.....	.....	.....	.....	.....
Democrat	3	1	2	.....	.....	Complied...

PERRY COUNTY.

NEW LEXINGTON.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
Feed Mill Co	Feed mills.....	6			.....	.....	.....
Samuel Hadden	Doors, sash, etc	8			.....	.....	.....
S. A. Arnold.....	Flour, etc.....	4			.....	.....	.....
G. A. & O. R. Granger.....	"	5			.....	.....	.....

PIKE COUNTY.

WAVERLY.

James Emmitt	Highwines	24	.....	1	Minors	Complied ..	.....
James Emmitt	Cooperage	10	.....		.....	.....	.....
Pee Pee Milling Co	Flour, etc	6	1		.....	.....	.....
James Emmitt... ..	Sawed stone	20	.....		.....	.....	.....
Pike County Republican	Newspaper	2	.....		.....	.....	.....
Gehares Bros.....	Doors, sash, etc	7	.....		.....	.....	.....
Waverly Woolen Mills.....	Flannels, etc.....	12	1	2	Minors	Complied ..	.....
James Emmitt.....	Planing mill	7	.....	2	Minors; machinery	Complied ..	.....
Waverly Spoke Works	Spokes, etc	15	.....		Machinery .....	.....	.....

PICKAWAY COUNTY.

CIRCLEVILLE.

Portage Straw Board Co.....	Straw boards.....	200	8	5	Minors	Complied ..	.....
Wm. Hefner & Son.....	Flour, etc.....	4	.....		.....	.....	.....
Hefner & Co.....	Corn meal.....	6	.....		Machinery; building .....	.....	.....
Union Herald.....	Newspaper	6	.....	2	Minors	Complied ..	.....

C. B. Tyler.....	Doors, sash, etc.....	15	.....	2	Minors.....	Complied ...
Deleplaine & Parks.....	Grain elevator.....	4	.....	.....	Machinery.....	.....
Conrad Richards.....	Barrels, etc.....	8	.....	.....	.....	.....
George H. Spangler.....	Carriages, etc.....	10	.....	.....	.....	.....
D. H. Worstall.....	Flour, etc.....	2	.....	.....	.....	.....
Charles S. Eaton.....	Machine shop.....	3	.....	.....	.....	.....
A. R. Barnes & Son.....	Sawing lumber.....	4	.....	.....	.....	.....
W. E. Bolin.....	Grain elevator.....	5	.....	.....	.....	.....
Roth Bros.....	Leather.....	14	.....	.....	.....	.....
Oliver & McEwing.....	Machine shop, etc.....	15	.....	.....	.....	.....

ROSS COUNTY.

CHILLICOTHE.

Elsass & Wilson	Leather	13	.....	.....	.....
Ingham & Co.....	Paper mill..	65	5	4	Minors; mach'y; fire-escape Machinery
Yeo & Co.....	Spokes, handles, etc	6	.....	.....	Complied ...
J. H. S. Ferguson.. ..	Ironing boards, etc.....	10	1	2	Minors
C., W. & B. R. R. Shops.....	Railroad repairs	183	1	5	"
Scioto Valley Grain Co	Grain elevator.....	5	.....	.....	.....
Scioto Valley Manufacturing Co.	Spokes and gearing.....	25	.....	.....	.....
Armstrong & Story.....	Leather	20	.....	.....	.....
Wm. Miller.....	Flour, etc	4	.....	.....	.....
F. D. Harman & Bro.....	Leather	12	.....	.....	.....
W. H. Reed & Co..	Doors, sash, etc	25	.....	.....	.....
Thomas J. Guin	Cut stone.....	8	.....	.....	.....
Marfield & Co.....	Grain elevator.....	9	.....	.....	.....
Jacob Knecht	Lager beer.....	6	.....	.....	.....
Chillicothe F'drv & Mach. Shop..	Engines, etc.....	30	.....	.....	.....
Charles Olmstead & Son.. ..	Harrowes, mill feed, etc.....	2	.....	.....	.....
Otto Wisslem & Co	Beer	6	.....	.....	.....
O. E. Books.....	Carriages, etc	6	.....	.....	.....
Miles & Ratcliff.....	Flour, etc.....	3	.....	.....	.....
Duncan Steam Laundry.....	Laundrying	3	10	.....	.....
A. Kramer & Son.....	Cigars.....	5	.....	.....	.....
Ross County Register.....	Newspaper.....	10	2	2	Minors
Howard & Stratemeyer.....	Printing, etc.....	4	1	2	"
Union Shoe Co.....	Shoes	52	40	6	"
Chillicothe Leader.....	Newspaper	14	1	4	"
August Schneider.. ..	Wagons	5	.....	.....	Elevator

CHILLICOTHE—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
Marfield & Co.....	Flour, etc.....	30	.....	3	Minors; machinery	Complied .....	.....
G. J. Hernstein & Bro.....	Doors, sash, etc.....	22	.....	.....	Machinery .....	.....	.....
August Schneider.....	Carriages.....	10	.....	2	Minors	Complied .....	.....
KINGSTON.							
E. Brown.....	Flour, etc	4	.....	.....	Machinery .....	.....	.....
Jesse Brundige.....	Flooring, etc.....	3	.....	.....	" .....	.....	.....
Halderman & Boggs.....	Grain elevator.....	3	.....	.....	.....	.....	.....
May, Robb & Co....	Drain tile, etc....	9	.....	.....	.....	.....	.....

SCIOTO COUNTY.

PORTSMOUTH.							
E. J. Salt & Co.....	Flannels	28	17	4	Minors	Complied .....	.....
C. C. Brown	Laundrying	3	7	1	"	Complied .....	.....
C. C. Bode & Son	Cut stone.....	12	.....	.....	.....	.....	.....
Scioto Valley R. R. Shops	Railroad repairs	90	.....	4	Minors	Complied .....	.....
Portsmouth Fire-Clay Brick Co...	Fire-clay brick.....	60	.....	12	"	Complied .....	.....
Ohio and N. W. R. R. Shops.	Railroad repairs	23	.....	.....	.....	.....	.....
Portsmouth F'dry & Mach. Wks..	Engines, etc	60	.....	3	Minors	Complied .....	.....
Black Diamond Fire-Brick Co....	Fire-brick	20	.....	.....	.....	.....	.....
Drew, Selby & Co.....	Shoes	80	70	15	Minors	Complied .....	.....
H. Leete & Co.....	Planing mill.....	10	.....	1	Minors; machinery	Complied .....	.....
Portsmouth Wagon Stock Co.....	Hubs, spokes, etc	45	.....	3	" elevator.....	Complied .....	.....
Johnson Spoke and Hub Co.	"	65	.....	3	" building	Complied .....	.....
Lehman, Keffer & Co	Doors, sash, etc	10	.....	2	Mach'y; building; minors...	Complied .....	.....
Nicholas Furniture Co	Furniture	45	.....	10	Minors; building.....	Complied .....	.....

Ohio Stove Co	Stoves, etc.	65	.....	4	Minors	Complied
G. Gerlack	Beer	11	.....	.....	.....	.....
E. Reitz & Co.....	Cut stone	20	.....	.....	.....	.....
Burgess Steel and Iron Works....	Steel and iron	225	.....	6	Minors	Complied
Geo. Tittle.....	Harness leather, etc.....	8	.....	.....	.....	.....
Henry Prescott	Wheelbarrows, etc	10	.....	3	Minors	Complied
Wm. P. Ripley.....	Carriages, etc.....	6	.....	3	"	Complied
Portsmouth Correspondent.....	Newspaper	4	2	1	"	Complied
Sanford, Varner & Co.	Clothing	17	85	.....	.....	.....
Padan Bros.....	Shoes	75	75	15	Minors	Complied
Cuppett & Webb.....	Sawed lumber	25	.....	.....	.....	.....
Neill Stove Works	Stoves, etc.....	35	.....	2	Minors	Complied
G. D. Wait	Furniture	25	.....	2	"	Complied
Portsmouth Blade	Newspaper	11	4	3	"	Complied
Weekly Tribune.....	"	10	5	3	"	Complied

SCIOTOVILLE.

Scioto Star Fire-Brick Co	Fire-brick	55	.....	5	Minors; machinery	Complied
L. P. N. Smith.....	Cigars, etc.....	3	.....	1	"	Complied
A. Yost	"	6	.....	1	"	Complied
M. B. Goble	Lumber	20	.....	4	"	Complied
Vinton White	"	20	.....	.....	.....	.....
Scioto Fire-Brick Co	Fire-brick	60	.....	20	Former orders; minors.....	Complied
Shoemaker & Eakins.....	Lumber	15	.....	.....	.....	.....

UNION COUNTY.

MARYSVILLE.

Journal Printing Co	Newspaper	4	.....	.....	.....	.....
J. H. Shearer & Son.....	"	5	1	.....	.....	.....
Fleck & Chapman	Doors, sash, etc	10	.....	.....	Machinery .....	.....
Robinson, Curry & Co.....	"	10	.....	.....	.....	.....
L. E. Bellus	Carriages, etc	6	.....	.....	.....	.....
L. C. Conrad	"	8	.....	.....	.....	.....
A. S. Turner.....	"	7	.....	.....	.....	.....
Dolbear & Vonderan	Dealers in grain ..	3	.....	.....	Machinery; building .....	.....
J. S. Alexander.....	Wire-slat fence	3	.....	.....	.....	.....
Marysville City Brewery	Lager beer	2	.....	.....	.....	.....
Sprague & Perfect.....	Flour, etc.....	6	.....	.....	.....	.....

MARYSVILLE—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
MILFORD CENTER.							
C. F. Lentz	Butter tubs, etc.....	8	.....	.....	.....	.....
J. Z. Rodgers	Machine repairs.....	1	.....	.....	.....	.....
M. Thompson.....	Sawing lumber	3	.....	.....	.....	.....
S. A. Cherry.....	.....	5	.....	.....	.....	.....
MILFORD CENTER.							
Chas. Michaels	Drain tile, etc.....	5	.....	.....	Machinery .....	.....
Elliotts & Moore.....	Flour, etc.....	4	.....	.....	.....	.....
A. J. Rigdon.....	Wire and picket fence.....	5	.....	.....	.....	.....
VINTON COUNTY.							
M'ARTHUR.							
Gilman & Gold	Flour, etc	5	.....	.....	.....	.....
P. Horton	Furniture	5	.....	.....	.....	.....
HAMDEN.							
Hamden Mill.....	Flour, etc.....	2	.....	.....	.....	.....
WASHINGTON COUNTY.							
HARMAR.							
Geo. Strecker & Co	Boilers.....	8	.....	.....	.....	.....
Harmar F'dry and Machine Shop	Engines, etc.....	9	.....	.....	.....	.....
Dirks, Jenvey & Co	Flour, etc	5	.....	.....	.....	.....
M. T. Robertson & Co	Plows, stoves, etc.....	34	.....	.....	Emery-wheels; elevator .....	.....
Strecker, Tompkins & Co.....	Flour, etc.....	8	.....	.....	Machinery .....	.....

MANCHESTER.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
Manchester Roller Mills.....	Flour, etc	6			.....	.....	.....
L. W. Trenary	Lumber	12			.....	.....	.....
Weaver & Bradford.....	Fruit jugs, etc.....	5			.....	.....	.....
Manchester Signal.....	Newspaper	3		1	Minors	Complied ..	.....
S. P. Lucker & Co.....	Carriages, etc.....	8			.....	.....	.....
Manchester Planing Mill Co.....	Doors, sash, etc.....	28		

WINCHESTER.

T. M. Young	Flour and lumber.....	3		
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ALLEN COUNTY.

LIMA.

The Lima Engine M'f'g Co.....	Engines, etc	6		
Sinclair & Morrison	Well-drilling tools	10		
W. Schultheis	Leather	23			.....	.....	.....
E. F. Dunan	Builders' wood-work	8			.....	.....	.....
C., H. & D. R. R. Shops.....	Railroad repairs	150		4	Minors; machinery ..	Complied ..	.....
Lima Machine Works	Locomotives	150			.....	.....	.....
The Cass Manufacturing Co	Handles, sucker rods, etc	9		1	Machinery; minors	Complied ..	.....
E. W. Cook.....	Job machinery	35		2	Minors; emery-wheels.....	Complied ..	.....
The Lima Paper Mills.....	Straw board and egg cases..	60	40	28	Machinery; minors	Complied ..	.....
Enterprise Cracker Co	Crackers	6	1	3	Minors; building	Complied ..	.....
Woolsey & Co	Bent wood-work, etc	72		6	Minors; machinery	Complied ..	.....
Castle & Muller.....	Drilling and fishing tools.....	8			.....	.....	.....
Lafayette Car Works	Railroad cars and repairs.....	300		6	Minors; elevator	Complied ..	.....
L. E. & W. R. R. Co.....	Locomotive repairs ..	103			.....	.....	.....
Dr. S. A. Baxter	Boxes and staves	6		2	Minors; machinery.....	Complied ..	.....

DELPHOS.

Steinle & Co.....	60	.....	Machinery .....	.....
Toledo, St. L. & Kansas City R. R.	100	.....	.....	.....
Weyer & Davis.....	15	.....	Minors; machinery	Complied
Krift & Ricker.....	7	.....	“ .....	Complied
D. Moening	7	.....	Machinery .....	.....
Shenk & Lang	7	.....	Fire-escape .....	.....

2Ex.D.

AUGLAIZE COUNTY.

ST. MARY’S.

R. B. Gordon	6	.....	1	Minors	Complied
C. Buehler	12	.....	2	“	Complied
L. Bimel & Son	85	.....	5	Minors; machinery	Complied
John Ladue	20	.....	2	Minors	Complied
St. Mary’s Woolen M’fg Co.....	18	19	4	“ machinery	Complied
Nietert & Koop.....	4	.....	.....	.....	.....

WAPAKONETA.

Stenger & Frank.....	5	.....	.....	Former orders.....	.....	Complied.
Wapakoneta Bending Co.....	47	.....	3	Minors	Complied .....	.....
J. Gately.....	4	.....	.....	.....	.....	.....
Theodore Dickman.....	4	.....	.....	Machinery; building.....	.....	.....
Bupp & Winemiller.....	4	.....	.....	.....	.....	.....
Wapakoneta Churn & Handle Co.	45	.....	2	Minors	Complied .....	.....
M. Brown & Co.....	27	.....	2	“	Complied .....	.....
Swink Bros. & Co..	16	.....	1	“ machinery	Complied .....	.....
C. Fisher.....	9	.....	.....	.....	.....	.....
Wapakoneta Spoke & Wheel Co..	50	.....	4	Minors; mach’y; ventilation	Complied .....	.....

BROWN COUNTY.

SARDINIA.

J. R. Irvin	5	.....	.....	Machinery .....	.....
Frank Ogden.....	6	.....	.....	“ .....	.....
Kibler & Kennedy	8	.....	.....	“ .....	.....
George A. Kennedy.....	4	.....	.....	“ .....	.....

RIPLEY.									
Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—			
		Males.	Females.	Minors.		Minors.	Other orders.		
Pritchard & Kilpatrick.....	Builders' wood-work.....	60	.....	3	Minors; machinery.....	Complied ..	.....	
J. P. Parker.....	Founder and machinist.....	6	.....	.....	Building .....	.....	.....
GEORGETOWN.									
R. Young & Co.....	Woolen goods.....	13	3	3	Minors	Complied ..	.....	
C. Single.....	Flour, etc.....	3	.....	.....	.....	.....	.....
BUTLER COUNTY.									
MIDDLETOWN.									
The Wilson & McCallay Co.....	Tobacco	210	210	50	Minors	Complied ..	.....	
The Warlow Thomas Paper Co...	Paper	50	.....	2	"	Complied ..	.....	
The Wren Paper Co.....	"	20	12	.....	Machinery .....	.....	.....
The P. J. Sorg Co.....	Tobacco	328	169	150	Minors	Complied ..	.....	
Middletown Buggy Co.....	Carriages, etc.....	15	.....	.....	.....	.....	.....
Middletown Pump Co.....	Pumps	65	.....	9	Minors; machinery; build'g	Complied ..	.....	
Ohio Paper Bag Co.....	Paper bags, etc.....	12	15	2	"	Complied ..	.....	
The Gardner Paper Co	Paper	50	5	6	" machinery.....	Complied ..	.....	
The Card Fabrique Co.....	Playing cards	10	30	4	"	Complied ..	.....	
R. E. Johnston.....	Paper bags.....	10	31	6	"	Complied ..	.....	
W. H. Todhunter.....	Printing.....	6	4	1	"	Complied ..	.....	
Ling & Van Sickle.....	Carriages, etc.....	8	.....	.....	Fire-escape .....	.....	.....
W. B. Oglesby Paper Co.....	Paper	45	20	.....	.....	.....	.....
La Tourrette & Co.....	Machinery, etc.....	20	.....	.....	.....	.....	.....
The Tytus Paper Co.....	Paper	45	.....	3	Minors	Complied ..	.....	
George Ault Flour Co.....	Flour, etc.....	6	1	.....	Machinery .....	.....	.....
Wm. Caldwell.....	Builders' wood-work, etc.....	23	.....	8	Minors; machinery.....	Complied ..	.....	

HAMILTON.

The A. Fisher Manufacturing Co..	30	175	50	Minors	Complied ..	.....
Gordon & Maxwell St'm Pump Co.	150	.....	6	"	Complied ..	.....
The Niles Tools Co.....	450	.....	25	"	Complied ..	.....
Louis Snider's Sons Co	17	15	5	" machinery	Complied ..	.....
Louis Snider's Sons Co	22	20	.....	Machinery; elevator.....	.....	.....
Louis Snider's Sons Co	40	30	.....	" .....	.....	.....
Hamilton Tile Works.....	16	12	5	Minors	Complied ..	.....
The Ritchie & Dyer Co.....	25	.....	3	" machinery.....	Complied ..	.....
Martin Bare	48	.....	.....	.....	.....	.....
C. H. Zwick & Co.	2	100	25	Minors	Complied ..	.....
Anderson & Shaffer.....	10	.....	1	"	Complied ..	.....
W. B. Brown & Co	5	.....	.....	Machinery .....	.....	.....
Sohn & Rentschler	60	.....	15	Minors; machinery	Complied ..	.....
The Phenix Caster Co	23	.....	21	"	Complied ..	.....
The Black & Clawson Co.....	113	.....	10	"	Complied ..	.....
The Long & Allstatter Co.....	190	.....	20	"	Complied ..	.....
Beckett, Laurie & Co	40	25	6	" mach'y; ventilation..	Complied ..	.....
H. P. Deucher.....	65	.....	12	" emery-wheels	Complied ..	.....
Carr & Brown.....	25	.....	.....	Machinery .....	.....	.....
The Sohn Ridge Implement Co...	25	.....	14	Minors	Complied ..	.....
Davidson & Doellmann.....	12	.....	2	" machinery	Complied ..	.....
The Hoover, Owens & Rentschler Co	160	.....	10	" machinery; elevator..	Complied ..	.....
Bentel, Margedant & Co.....	75	.....	3	"	Complied ..	.....
The J. F. Bender Bros. & Co.....	30	.....	3	"	Complied ..	.....
Shuler & Benninghoffen.....	35	25	8	"	Complied ..	.....
The Sortman & Bulen Co.....	30	.....	4	" mach'y; fire-escape..	Complied ..	.....
J. H. Stephan & Son	7	.....	.....	Ventilation .....	.....	.....
Semler & Co.....	6	.....	.....	Machinery .....	.....	.....
The Stephan-Hughes M'fg Co....	3	.....	.....	.....	.....	.....
P. Burns & Co.....	15	.....	.....	.....	.....	.....
John Donges & Co.....	14	.....	3	Minors	Complied ..	.....
Anderson & Shaffer.....	13	.....	.....	Machinery .....	.....	.....
Charles F. Eisel.....	11	.....	.....	.....	.....	.....
L. Deinzer & Son.....	7	.....	2	Minors	Complied ..	.....
L. & F. Kahn & Bros	150	.....	10	" mach'y; fire-escape..	Complied ..	.....

CLARKE COUNTY.
SPRINGFIELD.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
Whiteley, Fassler & Kelly.....	Harvesting machinery	350	.....	.....	Machinery; fire-escape.....	.....	.....
Springfield Coffin Co.....	Coffins, etc	25	6	.....	" .....	.....	.....
Champion Steel and Iron Co	Steel and iron works	92	.....	2	Minors	Complied ..	.....
McGregor & Bro.....	Brass goods.....	10	.....	1	"	Complied ..	.....
Champion City Times.....	Newspaper	23	.....	1	" machinery	Complied ..	.....
Superior Drill Co	Grain drills	125	.....	.....	.....	.....	.....
The Thomas Manufacturing Co...	Hay rakes, lawn mowers, etc.	125	.....	2	Minors; elevator	Complied ..	.....
Springfield Brass Co.....	Brass goods.....	22	.....	2	" building.....	Complied ..	.....
Champion Malleable Iron Co.....	Iron castings	338	.....	20	"	Complied ..	.....
Champion Bar and Knife Co	Harvesting machine bars and knives .....	.....	.....	.....	.....	.....	.....
Springfield Malleable Iron Co	Iron castings	290	.....	25	"	Complied ..	.....
Springfield Machine Tool Co.....	Brass and iron workers' tools	175	.....	6	" elevator; ventilat'n ..	Complied ..	.....
Champion Shifting Seat Iron Co..	Shifting seat irons.....	12	.....	1	"	Complied ..	.....
The Tricycle Manufacturing Co...	Tricycles, etc.....	4	.....	.....	Ventilation .....	.....	.....
Mast, Foos & Co	Wind mills, etc.....	100	8	6	Minors; machinery.....	Complied ..	.....
Warder, Bushnell & Glessner	Harvesting machines.....	150	.....	35	" building.....	Complied ..	.....
The Standard Manufacturing Co..	Extension tables.....	900	.....	30	" machinery	Complied ..	.....
Springfield Metallic Casket Co....	Burial caskets	45	.....	8	Fire-escape	Complied ..	.....
Springfield Engine & Thresher Co	Threshers and engines	16	3	.....	Minors; emery-wheels .....	.....	.....
The P. P. Mast Co	Grain drills, cider presses, etc	275	.....	3	Minors; building; elevator;	Complied ..	.....
St. John Sewing Machine Co	Sewing machines	300	.....	12	machinery; ventilation.....	.....	.....
G. S. Foos & Co.....	Clothes wringers, etc.....	200	2	5	Minors; elevator.....	Complied ..	.....
A. T. Byers.....	Portable engines.....	9	.....	1	"	Complied ..	.....
The Foos Manufacturing Co.....	Feed mills, forges, etc.....	10	.....	.....	Elevator.....	.....	.....
		50	.....	1	Minors; machinery; build-	.....	.....
					ing; ventilation	Complied ..	.....

E. W. Ross & Co.....	Hay and straw cutters	150	.....	.....	Machinery; emery-wheels; fire-escape.....	.....	.....
A. M. Rawlins	Lumber	5	.....	.....	Machinery .....	.....	.....
Ohio Southern Railroad Shops.....	Locomotive repairs	115	.....	.....	" .....	.....	.....
Robbins & Myers	Iron castings.....	120	.....	.....	" ventilation .....	.....	.....
Jas. Leffel & Co.....	Steam engines, water-whe'ls, etc	100	.....	6	Minors	Complied ..	.....
Globe Printing and Publishing Co	Publishing and printing	40	32	13	"	Complied ..	.....
The A. C. Evans Manufactur'g Co	Agricultural implements	100	.....	5	" machinery	Complied ..	.....
D. Strock	Builders' wood-work	4	.....	.....	Machinery .....	.....	.....
Dunn & Ferris	"	7	.....	1	Minors; machinery	Complied ..	.....
Springfield Machine Co	Wind mills, etc	18	.....	1	"	Complied ..	.....
Springfield Planing Mill Co.....	Builders' wood-work	10	.....	.....	.....	.....	.....
Hanika Iron Fence Co	Iron fence, etc.....	30	.....	4	Minors; emery-wheels.....	Complied ..	.....
Springfield Manufacturing Co.....	Grave vaults.. ..	60	.....	.....	Machinery .....	.....	.....
Mark A. Smith	Soaps	3	.....	.....	Building .....	.....	.....
The Rogers Fence Co	Iron fence, etc.....	21	.....	1	Minors; elevator	Complied ..	.....
J. V. Elster	Carriage specialties	4	.....	.....	.....	.....	.....
Mast, Crowell & Kirkpatrick.....	Printing, etc.....	50	30	5	Minors	Complied ..	.....
The J. D. Smith Co	Book-bindings, etc	6	4	.....	.....	.....	.....
The Blakeney Foundry Co	Iron castings.....	50	.....	.....	.....	.....	.....
The Hoppes Manufacturing Co...	Lime extractors for boilers..	7	.....	.....	.....	.....	.....
W. F. Bauroth	Machine jobbing.....	8	.....	4	Minors	Complied ..	.....
Fell, Johnson & Co	Carriages	30	.....	.....	.....	.....	.....
Armstrong Bros.....	Boilers, etc	70	.....	2	Minors	Complied ..	.....
L. Patrie & Co	Furnaces	6	.....	.....	.....	.....	.....
C. W. Wadsworth.....	Stencils, stamps, etc	9	.....	1	Minors; building	Complied ..	.....
The New Era Co	Printing, etc.....	15	10	1	"	Complied ..	.....
D. T. West	"	7	.....	.....	.....	.....	.....
Springfield Publication Co.....	"	20	.....	2	Minors	Complied ..	.....
The Foss Seed Oil Co	Oils	6	.....	.....	.....	.....	.....
T. E. Harwood	Printing, etc	21	.....	1	Minors	Complied ..	.....
St. John Sewing Machine Co	Sewing machine tables.....	30	8	6	Minors; machinery	Complied ..	.....

CHAMPAIGN COUNTY.

URBANA.

Dimond & Peck	Carriages, etc	10	.....	1	Minors	Complied ..	.....
C. G. Smith	Leather	6	.....	.....	.....	.....	.....
Colwell Lumber and Manuf'g Co.	Builders' wood-work	11	.....	.....	.....	.....	.....

URBANA—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
J. J. Robinson & Sons.....	Brooms.....	8	.....	1	Minors.....	Complied...	.....
J. R. Fuller.....	".....	23	1	8	" building.....	Complied...	.....
The U. S. Rolling Stock Co.	Freight cars, etc.....	350	.....	5	".....	Complied...	.....
C. A. Miller.....	Job machinery.....	10	.....	.....	.....	.....	.....
Edward Bailey.....	Lumber.....	5	.....	.....	.....	.....	.....
Perry & White.....	Brooms.....	62	.....	10	Minors; fire-escape.....	Complied...	.....
R. Anderson.....	Job iron castings.....	4	.....	.....	.....	.....	.....
Aughinbaugh & Baker Bros.....	Carriages.....	12	.....	1	Minors.....	Complied...	.....
Wm. H. Crane & Co.....	Stoves, etc.....	15	.....	.....	.....	.....	.....
Henry Fox & Co.....	Woolen blankets, etc.....	25	16	3	Minors; machinery.....	Complied...	.....
J. T. Woodward & Co.....	Flour, etc.....	5	.....	.....	Machinery; elevator.....	.....	.....

MECHANICSBURG.

Stuart & Mickle.....	Woolen goods.....	4	5	3	Minors; machinery.....	Complied...	.....
W. C. Downey & Co.....	Agricultural implements.....	45	.....	.....	Machinery.....	.....	.....
Hunter & Johnson.....	Flour, etc., and lumber.....	5	.....	.....	.....	.....	.....

CLERMONT COUNTY.

WILLIAMSBURG.

Chatterton & Peterson.....	Flour, etc.....	4	.....	.....	Machinery.....	.....	.....
C. H. Boulevard & Bro.....	Chairs.....	22	16	10	Minors; machinery.....	Complied...	.....
Hull & McAdams.....	Turned wood.....	5	.....	1	Minors.....	Complied...	.....
S. D. Mount.....	Chairs.....	30	12	4	" machinery.....	Complied...	.....

NEW RICHMOND.

J. & H. Clasgens.....	Woolen yarns.....	42	23	32	Minors.....	Complied...	.....
Fridma, Clark & Co.....	Builders' wood work.....	20	.....	.....	Machinery.....	.....	.....
J. W. Willinbrink.....	Flour, etc.....	3	.....	.....	.....	.....	.....

CLINTON COUNTY.

WILMINGTON.

C. W. Newlove	2	.....	.....	.....	Minors; machinery .....	.....	.....
The Clinton Manufacturing Co...	15	.....	.....	2	Minors	Complied .....	.....
Wm. Scofield	9	1	.....	1	Former orders	Complied .....	.....
Shepherd & Ludlum	7	.....	.....	.....	Machinery .....	.....	Complied.
Hawkins & Spray	3	.....	.....	.....	" .....	.....	.....
Fulton & Peters	16	.....	.....	.....	.....	.....	.....
Champion Bridge Co.	20	.....	.....	.....	.....	.....	.....
Irwin Auger Bit Co	10	.....	.....	.....	.....	.....	.....
James Fisher	4	.....	.....	.....	.....	.....	.....

NEW VIENNA.

Baker & Lazenby	3	.....	.....	.....	Machinery .....	.....	.....
J. M. Hussey	4	.....	.....	.....	.....	.....	.....
D. Q. Nevins	5	.....	.....	.....	.....	.....	.....
W. L. Hussey	3	.....	.....	.....	.....	.....	.....

BLANCHESTER.

J. R. Williams & Co.	15	.....	.....	2	Minors	Complied .....	.....
Scott & Crosson	3	.....	.....	.....	Machinery .....	.....	.....

DARKE COUNTY.

GREENVILLE.

A. J. Klinger	4	.....	.....	.....	Machinery .....	.....	.....
Lucas & Garrigues	8	.....	.....	.....	.....	.....	.....
Kuntz & Wright	9	.....	.....	1	Machinery; minors	Complied .....	.....
W. J. Troxell	4	.....	.....	.....	.....	.....	.....
J. T. Hartzell & Son	35	.....	.....	3	Minors; machinery, ventila'n	Complied .....	.....

GREENE COUNTY.

XENIA.

J. P. & W. P. Chew	5	6	.....	3	Minors	Complied .....	.....
N. F. Copenhaver	5	.....	.....	.....	Machinery .....	.....	.....
Upham & Clayton	4	.....	.....	.....	" .....	.....	.....
Leonard, Smith & Co.	12	.....	.....	.....	" .....	.....	.....

XENIA—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
The Field Cordage Co.....	Cordage, etc.....	83	85	15	Minors; elevator; mach'y...	Complied...	.....
The Xenia Twine and Cordage Co	".....	54	28	12	Minors.....	Complied...	.....
The Xenia Paper Mill Co.....	Brown paper.....	25	.....	.....	.....	.....	.....
Hoover & Allison.....	Cordage, etc.....	38	60	13	Minors; ventilation; mach'y	Complied...	.....

HAMILTON COUNTY.

CINCINNATI.

A. Freidmann.....	Clothing.....	4	20	6	Minors.....	Complied...	.....
Chas. Eisenmart, Sr.....	".....	4	15	4	".....	Complied...	.....
John Wild.....	".....	3	15	3	".....	Complied...	.....
Wm. Autenreith.....	Surgical instruments.....	8	2	1	Building; fire-escape; minors	Complied...	.....
Sampson Levi.....	Clothing.....	10	30	5	Fire-escape; vent'n; minors	Complied...	.....
John Weber.....	".....	5	20	5	Minors; fire-escape.....	Complied...	.....
Frank Fallen.....	".....	1	10	3	Minors.....	Complied...	.....
Mrs. Augusta Meyer.....	".....	3	14	5	" building.....	Complied...	.....
Mrs. C. Brodbeck.....	".....	2	19	3	Minors.....	Complied...	.....
B. Schlunzauer.....	".....	2	8	2	".....	Complied...	.....
Samuel Levy.....	".....	4	18	4	".....	Complied...	.....
M. Becker.....	".....	3	14	2	".....	Complied...	.....
Peter Miller.....	".....	3	16	5	".....	Complied...	.....
H. E. Ottopal.....	".....	.....	8	3	".....	Complied...	.....
Andreas Jones.....	".....	2	11	3	".....	Complied...	.....
Theresa Renner.....	".....	2	12	3	".....	Complied...	.....
Mrs. Annie Gottfried.....	".....	1	12	4	".....	Complied...	.....
Albert Herschong.....	".....	8	50	25	".....	Complied...	.....
J. & N. Kleidorfer.....	".....	3	15	5	".....	Complied...	.....
John Sauer.....	".....	6	19	6	".....	Complied...	.....

Sebastian Miller	Clothing	5	15	3	Minors	Complied
Chas. Knittel.....	"	5	20	15	"	Complied
Harris Levi.....	"	9	37	6	"	Complied
Nicholas M. Marx	"	3	20	5	"	Complied
Henry Schlesselman	"	3	16	6	"	Complied
Geo. W. Stephan	"	3	12	5	"	Complied
H. Pringbach	"	2	15	9	"	Complied
Frank Bicklemeyer	"	3	16	4	"	Complied
Wendt Maresch	"	3	12	6	"	Complied
Frank Fey	"	3	5	4	"	Complied
Sol. Sneckler	"	3	10	3	"	Complied
Peter Marx	"	3	13	4	"	Complied
Mrs. Charlotte Wolfhorst.....	"	3	11	4	"	Complied
P. P. Branch.....	"	4	12	3	"	Complied
John Berning	"	4	7	4	"	Complied
Fred. Moeller	"	5	18	4	"	Complied
Peter Marx	"	3	10	5	Ventilation; minors	Complied
Frie Presse	Newspaper	35	.....	3	Minors; fire-escape	Complied
J. R. Kinsley	Gold and silver plating.....	190	.....	50	Machinery; minors; fire-escape; elevator.....	Complied
Stacy & Straehley	Shoes	8	5	.....	Fire-escape; elevator	Complied
The Ireland Manufacturing Co....	Builders' hardware	75	.....	6	Minors; emery-wheels.....	Complied
Sullivan, Mead, Bush & Co.....	Shoes	87	80	20	Machinery; build'g; minors	Complied
Adam Roman	Tailoring	3	14	2	Minors	Complied
J. R. Dorsey	"	6	20	2	"	Complied
John Schoettle	"	2	6	3	"	Complied
L. Long	"	2	7	2	"	Complied
A. Stern.....	"	3	6	2	"	Complied
Geo. Noppar.....	"	2	7	2	"	Complied
Chas. Wistach	"	4	13	3	"	Complied
Henry Meyer	"	3	4	.....	.....	Complied
Harig & Bruggeman	Carpenters' wood-work	15	.....	.....	Machinery .....	.....
Ballman & Huggenberry Co	Furniture	35	.....	.....	" .....	.....
George M. Buerger	Tailoring	4	15	3	Minors	Complied
Schwind & Co	Job wood-work	6	.....	1	" machinery	Complied
Charles Felix.....	Tailoring.....	3	11	1	"	Complied
Norbert Gottfried	"	3	18	6	.....	Complied
American Glycerine Co	Glycerine	6	.....	.....	.....	.....
John W. Pfaff & Co	Varnishes	5	.....	.....	.....	.....
M. Werk & Co.....	Soaps, etc.....	50	24	6	Minors; machinery.....	Complied

CINCINNATI—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
Nichols & Co.....	Mattresses.....	4	1	.....	Elevator.....	.....	.....
P. E. O'Donnell.....	Harness.....	2	.....	.....	.....	.....	.....
American Grange Bulletin Co....	Newspaper.....	5	.....	.....	.....	.....	.....
Fritz Bros.....	Cigars.....	52	35	38	Minors.....	Complied...	.....
John Brumback & Co.....	Printing.....	8	.....	1	".....	Complied...	.....
D. S. Carrick & Co.....	Harness, etc.....	16	.....	2	".....	Complied...	.....
R. P. Winckler.....	Book-binding.....	5	.....	2	".....	Complied...	.....
G. H. L'Hommedieu.. ..	Rubber stamps.....	3	.....	.....	.....	.....	.....
Frank Pope.....	Sign painter.....	2	.....	.....	.....	.....	.....
Fred. Brandtitz.....	Paper boxes.....	4	12	8	Minors; fire-escape.....	Complied...	Complied.
A. B. Ratterman.....	Boot and shoe uppers.....	4	5	.....	Fire-escape.....	.....	.....
J. R. Lindner.....	Cigars.....	25	.....	2	Minors.....	Complied...	.....
Langenbrunner & Co.....	Horse collars.....	28	.....	5	".....	Complied...	.....
Burkhardt & Co.....	Lard oil.....	13	.....	.....	Machinery; elevator.....	.....	.....
F. & H. Bernings.....	Cigars.....	28	.....	4	Minors.....	Complied...	.....
Voige & Winters.....	".....	30	.....	1	".....	Complied...	.....
Buckeye Hame Tug Co.....	Hame tugs, etc.....	15	.....	3	".....	Complied...	.....
R. H. Crane.....	Paper boxes.....	8	40	6	".....	Complied...	.....
Stern, Auer & Co.....	Shoes.....	30	3	4	Machinery; minors.....	Complied...	.....
A. Nunnee.....	Show cases.....	4	.....	.....	Fire-escape; elevator.....	.....	.....
Grossman, Givion & Co.....	Harness, etc.....	75	.....	3	Minors.....	Complied...	.....
Schmitt & Bro.....	Show cases.....	25	.....	.....	.....	.....	.....
H. D. Smith & Co.....	Candies, etc.....	15	25	15	Minors.....	Complied...	.....
DeCamp, Leroy & Co.....	Horse collars.....	45	.....	1	".....	Complied...	.....
Schmitt & Co.....	Show cases.....	45	.....	.....	.....	.....	.....
Scherder, Rusche & Co.....	Shoes.....	20	12	3	Minors; former orders... ..	Complied...	Complied.
DeCamp, Leroy & Co.....	Harness, etc.....	100	2	15	".....	Complied...	.....
W. M. Donaldson & Co.....	Picture frames, etc.....	18	8	8	"..... fire-escape.....	Complied...	.....

C. L. Greeno.....	5	.....	.....	.....	Elevator; fire-escape.....	.....	.....
The William Powell Co	160	.....	.....	25	Minors; elevator .....	.....	Complied ..
S. H. Halstead & Co.....	2	65	.....	30	" .....	.....	Complied ..
J. W. Greenfield	8	.....	.....	.....	.....	.....	.....
Loge & Kuesser	7	.....	.....	.....	.....	.....	.....
Jacob Winckler & Co.....	2	10	.....	.....	.....	.....	.....
David H. Drake.....	10	.....	.....	.....	.....	.....	.....
John F. Hoeb & Co	25	8	.....	8	Minors; fire-escape .....	.....	Complied ..
Isaac Winckler & Bro.....	3	28	.....	.....	Fire-escape .....	.....	.....
W. Skinner & Co	10	.....	.....	.....	" .....	.....	.....
Alms & Doepe.....	15	40	.....	4	Minors .....	.....	Complied ..
The P. Reuhl Manufacturing Co..	50	.....	.....	5	" .....	.....	Complied ..
Stenger, Boyd & Co	14	11	.....	2	Fire-escape; minors; elevator ..	.....	Complied ..
A. Lucik	12	.....	.....	4	Minors .....	.....	Complied ..
J. C. Ruchstuhl.....	.....	.....	.....	5	" .....	.....	Complied ..
J. B. Papenbrock .....	.....	35	.....	.....	.....	.....	.....
George Hecker	55	27	.....	6	Minors .....	.....	Complied ..
The P. Reuhl Manufacturing Co..	100	.....	.....	20	Minors; machinery; build'g ..	.....	Complied ..
Fred. Grossman.....	3	.....	.....	1	" .....	.....	Complied ..
Cincinnati Suspender Co.....	2	12	.....	.....	Fire-escape.....	.....	.....
M. West & Son.....	.....	3	.....	.....	" .....	.....	.....
Spence Bros. & Co	30	40	.....	25	Machinery; minors .....	.....	Complied ..
A. J. Gunter & Co.....	7	.....	.....	3	Minors .....	.....	Complied ..
Ignatz Grimm.....	12	.....	.....	2	" .....	.....	Complied ..
Emil Paetow & Co.....	22	.....	.....	.....	.....	.....	.....
J. P. Zimmerman.....	8	.....	.....	.....	.....	.....	.....
A. J. Marshall.....	15	15	.....	4	Minors.....	.....	Complied ..
Wm. Schumacher.....	6	8	.....	.....	.....	.....	.....
Knaubloth & Co.....	1	.....	.....	.....	Fire-escape .....	.....	.....
The Myers & Merkle Manuf'g Co	35	.....	.....	.....	Machinery; building.....	.....	.....
Dann & Pulskamp.....	22	.....	.....	.....	Machinery .....	.....	.....
S. Lowenthal & Co.....	60	65	.....	25	Minors; elevator .....	.....	Complied ..
W. F. Thorne & Co.....	37	8	.....	.....	Elevator.....	.....	.....
The Wm. Miller Furnace and Range Co.	40	.....	.....	.....	Emery-wheels .....	.....	.....
J. W. Gosling & Co.....	60	.....	.....	.....	Elevator.....	.....	.....
Wolf & Co.....	60	50	.....	10	Minors .....	.....	Complied ..
The Krebs Lithographing Co.....	110	5	.....	12	" .....	.....	Complied ..
White Star Steam Laundry and Manufacturing Co.....	2	53	.....	3	Elevator; minors.....	.....	Complied ..

CINCINNATI—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
Blacker, Sachs & Gerstle.....	Shoes.....	175	190	70	Mach'r'y; ventilat'n; minors	Complied ..	.....
The Goch Freezer Co	Ice cream freezers.....	32	.....	2	Minors	Complied ..	.....
Wrigley Bros.....	Paper boxes.....	8	50	8	"	Complied ..	.....
B. Schepman & Co.....	Wagons.....	20	.....	.....	.....	.....	.....
W. H. Rowe & Co..	Carriages	30	.....	3	Minors	Complied ..	.....
Perkins, Campbell & Co.....	Horse collars.....	35	.....	2	Fire escape; minors.....	Complied ..	.....
C. F. Bradley & Co.....	Printing.....	30	.....	23	Minors; elevator.....	Complied ..	.....
The Donaldson Lithographing Co	Lithographing.....	38	.....	8	Elevator; minors.....	Complied ..	.....
The Enterprise Carriage Co.....	Carriages, etc.....	150	4	7	Minors; mach'y; em'y-wh'ls	Complied ..	.....
The Enquirer Job Printing Co.....	Printing.....	25	.....	2	Machinery; minors; elevator	Complied ..	.....
Chatfield & Woods.....	Paper bags	10	13	3	Minors; elevator.....	Complied ..	.....
The Franklin Furniture Co.....	Furniture... ..	63	.....	2	"	Complied ..	.....
The Cincinnati Shade Cloth and Window Shade Manufac'g Co	Window shades.....	10	.....	.....	.....	.....	.....
The Bell Telephone Co.....	Central telephone transfer...	5	17	.....	.....	.....	.....
Sullivan Printing Works.....	Printing and binding.....	20	10	4	Minors; machinery	Complied ..	.....
Perkins, Campbell & Co.....	Harness, etc.....	80	1	4	"	Complied ..	.....
Easton & Clark.....	Carriages, etc.....	75	3	5	Building; elevator; fire es- cape; minors.....	Complied ..	.....
E. A. Conckling	Packing boxes.. ..	22	.....	1	Minors; machinery; elevator	Complied ..	.....
The G. Y. Roots Co.....	Flour, etc.....	22	.....	.....	Machinery .....	.....	.....
Benjamin Hey.....	Shoddy.....	12	31	.....	Elevator.....	.....	.....
A. J. Nurre & Co.....	Picture frame mouldings.....	130	.....	25	Minors; machinery	Complied ..	.....
J. W. Cotteral & Co.....	Builders' wood-work	40	.....	.....	Elevator.....	.....	.....
The Hunter Manufacturing Co....	Flour sifters.. ..	14	.....	.....	" .....	.....	.....
P. R. Olis & Co.....	Printing.....	3	.....	2	Minors	Complied ..	.....
The Telegram Publishing Co.....	Newspaper.....	45	.....	.....	Building .....	.....	.....
The Carriage Wood-work M'fg Co	Carriage wood-work	20	.....	.....	.....	.....	.....

The Cin. Arbeiter Zeitung Co.....	Newspaper.....	25			Ventilation .....	..	..
The Anchor White Lead Co.....	Lead	60			Machinery; elevator.....	..	..
J. P. Walton & Co.....	Architectural iron.....	60			Minors	Complied ...	..
Lodge, Davis & Co.....	Machinery	95		25	"	Complied ...	..
R. M. McBeth.....	Drill presses.....	7		2	Machinery; minors.....	Complied ...	..
Fosdick & Co.....	Upright drills.....	14		1	Minors	Complied ...	..
Wm. Barker & Co.....	Brass and iron workers' tools	10		1			..
W. H. Muggeridge.....	Moulding patterns.....	4					..
W. B. Smith.....	Machinists' tools.....	6					..
George H. Boute & Co.....	Cordage, etc.....	50		15	Minors; machinery; ventila- tion; fire-escape	Complied ...	..
The Excelsior Foundry Co.....	Castings, etc.....	100		6	Building; minors.....	Complied ...	..
P. Hagerty & Son.....	Shoes.....	18	16	3	Minors	Complied ...	..
C. H. Gould & Co.....	Cordage, etc.....	15	70	30	"	Complied ...	..
Henry Pearce's Sons.....	Cotton goods.....	50	150	25	Elevator; minors.....	Complied ...	..
George Latham & Sons.....	Shoes.....	30	20	10	Minors; fire-escape.....	Complied ...	..
The Cincinnati Corrugating Co...	Corrugated iron	4		3	" elevator.....	Complied ...	..
D. Stern & Langenbeck.....	Decorative art (terra cotta)...	15	2	4	"	Complied ...	..
F. M. Watkins & Co.....	Laundry machinery.....	6		1	" machinery.....	Complied ...	..
J. H. Lucke & Co.....	Cigars.....	35	35	30	" fire-escape.....	Complied ...	..
The Wm. S. Merrill Chemical Co	Chemicals.....	16	23		Machinery .....		..
The Granger Carriage Co.....	Carriages.....	75					..
Charles Irwin.....	Laundrying... ..		8		Minors; machinery.....	Complied ...	..
Mendel & Rosenberger.....	Boxes, etc.....	30		3			..
Chatfield & Woods.....	Paper stock	5	35		Minors	Complied ...	..
Joseph W. Wayne.....	Refrigerators.....	32		2	"	Complied ...	..
The Gainsford Co.....	Carriages.....	88	3	15	Machinery	Complied ...	..
H. J. Reedy.....	Elevators.....	50			Minors	Complied ...	..
L. D. Thompson.....	Gold and silver plating.....	7		2			..
Anthan E. Stoehl.....	Stairs.....	12					..
Charles E. Francis.....	Wood-working machinery...	9					..
P. W. Reinshagen.....	Machinery	10					..
Lawrence Roth.....	Truss hoops, etc.....	10					..
The Parker Carriage Goods Co....	Carriage goods.....	58	11	25	Minors; fire-escape; ventila- tion	Complied ...	..
The Chamberlain Stove Co.....	Stoves, etc.....	125					..
S. G. Rice & Sons.....	Boxes.....	40		20	Minors; building; machin'y	Complied ...	..
H. T. Morten & Co.....	Carriage wood-work.....	60		4	Mach'y; minors; fire-escape	Complied ...	..
E. E. Evans & Co.....	Stairs, etc.....	30			Elevator.....		..
James Griffith & Sons.....	Builders' wood-work.....	60					..

CINCINNATI—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
Ignatz Wertz.....	Wood turning.....	3	.....	.....	.....	.....	.....
The Favorite Carriage Co.....	Carriages.....	75	6	4	Minors	Complied ..	.....
Hunt Street Furniture Co	Furniture.....	35	.....	.....	.....	.....	.....
J. F. Thedick.....	Wood turning.....	3	.....	.....	.....	.....	.....
John F. Hugo & Co	Printing.....	4	.....	.....	.....	.....	.....
J. C. Richey.....	Military goods.....	5	.....	.....	Fire-escape.....	.....	.....
John H. Elfering.....	Models, etc.....	2	.....	.....	Building; fire-escape.....	.....	.....
George Stribley & Co.....	Shoes	175	175	75	Minors; building.....	Complied ..	.....
George Doer.....	Watch cases.....	4	.....	.....	.....	.....	.....
Edward Metz.....	Cigars.....	9	.....	1	Minors.....	Complied ..	.....
C. F. Bradley & Co.....	Blank books and printing...	18	2	3	"	Complied ..	.....
Q. A. McMillan.....	Picture copying.....	5	3	.....	.....	Complied ..	.....
J. J. Sayre	Stencils, etc.....	3	.....	.....	.....	.....	.....
M. D. Connelly.....	Printing	4	.....	1	Minors; fire-escaps.....	Complied ..	.....
George E. Bryan.....	"	6	.....	3	"	Complied ..	.....
A. H. Pounsford & Co.....	Blank books.....	6	3	2	"	Complied ..	.....
Martin & Opp.....	Tailoring.....	3	.....	1	"	Complied ..	.....
Frank Gofton.....	Shirts.....	1	2	.....	Fire-escape.....	.....	.....
Edward McKee.....	Engraving.....	3	.....	.....	" .....	.....	.....
M. E. Kuhn.....	Umbrellas, etc.....	12	18	6	Minors.....	Complied ..	.....
M. Hammelrath.....	Jewelry, etc.....	4	.....	2	"	Complied ..	.....
Thomas F. Convooy.....	Glass work.....	2	.....	.....	.....	.....	.....
Richard Odgers.....	Artificial limbs	2	.....	.....	.....	.....	.....
Frank D. Rettick.....	Models, etc.....	5	.....	.....	.....	.....	.....
Wrightson Printing Co	Printing, etc.....	20	18	.....	.....	.....	.....
Robert Clarke & Co.....	"	42	22	2	Minors.....	Complied ..	.....
H. & S. Pogue	Millinery, etc.....	1	47	.....	Fire-escape .....	.....	.....
The Meader Furniture Co.....	Upholstering, etc.....	12	1	.....	" .....	.....	.....

G. F. Otte & Co.....	5	25	Building	Complied	.....
Roth, Bruner & Feis	250	150	Minors; building	Complied	.....
Burkhardt & Co.....	10	47	.....	.....	.....
Osborn & Hutchins.....	.....	6	.....	.....	.....
L. B. Thomas & Co.....	9	5	.....	.....	.....
M. & L. S. Fechheimer.....	20	1	.....	.....	.....
M. Steinert & Sons.....	3	.....	.....	.....	.....
Wylor, Ackuland & Co	15	.....	.....	.....	.....
Albert Krell.....	3	.....	.....	.....	.....
Com. Gazette Job Printing Co.....	15	3	Minors	Complied	.....
J. & A. Simpson.....	35	25	Minors; machinery	Complied	.....
Com. Gazette Publishing Co.....	40	.....	Machinery; building	.....	.....
J. H. Keightly.....	3	1	.....	.....	.....
West. Methodist Book Pub'g Co.	115	36	Minors; fire-escape	Complied	.....
B. Bishoff's Sons.....	5	50	"	Complied	.....
Charles Tobias & Co.....	12	30	"	Complied	.....
Kuppendorff, Detman & Co	300	250	Machinery; minors; elevator	Complied	.....
R. H. Robinson.....	5	26	Minors; fire-escape	Complied	.....
Max Stadler & Co.....	40	.....	Fire-escape	.....	.....
Levy, Rau & Price.....	8	.....	"	.....	.....
N. Drucker & Co.....	65	.....	"	.....	.....
M. Ettinger & Co.....	8	.....	.....	.....	.....
Cohn Bros. & Co	7	.....	.....	.....	.....
Beitman, Bloom & Co.....	4	.....	.....	.....	.....
Seasongood & Co	23	.....	.....	.....	.....
Goldsmith, Klaw & Co	9	.....	.....	.....	.....
Owenstein & Rice.....	3	25	Minors	Complied	.....
Herman, Loeb & Co.....	12	125	.....	.....	.....
M. H. Marks & Co.....	8	.....	.....	.....	.....
Oppenheimer, Strauss & Co.....	5	.....	.....	.....	.....
Mock, Berman & Co.....	15	.....	.....	.....	.....
Kahn, Sturm & Co	10	.....	.....	.....	.....
Heidelberg, Friedlander & Co.....	11	.....	.....	.....	.....
Wolfson Bros. & Co.....	7	.....	.....	.....	.....
Heilbrun, Heldman & Co.....	9	.....	.....	.....	.....
Fechheimer Bros. & Co.	8	.....	.....	.....	.....
A. L. Diamant & Co.....	5	24	Minors	Complied	.....
May Bros. & Co.....	6	.....	Fire-escape	.....	.....
Witt & Brown.....	20	.....	Building; fire-escape	.....	.....
Wm. S. Palmer.....	10	.....	Fire-escape	.....	.....
Carpet fitting .....	.....	.....	.....	.....	.....
Cigars.....	.....	.....	.....	.....	.....
Fur goods.....	.....	.....	.....	.....	.....
Millinery.....	.....	.....	.....	.....	.....
Carpet fitting.....	.....	.....	.....	.....	.....
Clothing cutting.....	.....	.....	.....	.....	.....
Pianos repaired.....	.....	.....	.....	.....	.....
Clothing cutting.....	.....	.....	.....	.....	.....
Pianos repaired.....	.....	.....	.....	.....	.....
Printing.....	.....	.....	.....	.....	.....
Shoes.....	.....	.....	.....	.....	.....
Newspaper .....	.....	.....	.....	.....	.....
Printing.....	.....	.....	.....	.....	.....
Books, etc.. .....	.....	.....	.....	.....	.....
Cloaks .....	.....	.....	.....	.....	.....
Caps, etc.....	.....	.....	.....	.....	.....
Shoes .....	.....	.....	.....	.....	.....
Cloaks, etc.....	.....	.....	.....	.....	.....
Clothing cutting.....	.....	.....	.....	.....	.....
"
Trunks .....	.....	.....	.....	.....	.....
Clothing cutting.....	.....	.....	.....	.....	.....
"
"
"
"
Neck ties, etc.....	.....	.....	.....	.....	.....
Cloaks .....	.....	.....	.....	.....	.....
Clothing cutting.....	.....	.....	.....	.....	.....
"
"
"
"
"
"
Caps .....	.....	.....	.....	.....	.....
Clothing cutting.....	.....	.....	.....	.....	.....
Architectural iron work.....	.....	.....	.....	.....	.....
Shoes .....	.....	.....	.....	.....	.....

CINCINNATI—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
Goldman, Thurmauer & Co.....	Cutting clothing.....	22	.....	.....	.....	.....	.....
Moritz, Doob & Bro.....	Cloaks, etc.....	3	6	.....	.....	.....	.....
Stern, Mayer & Co.....	Cutting clothing.....	20	3	.....	.....	.....	.....
F. Kaarmann.....	Blank-books.....	3	3	.....	.....	.....	.....
Henry Seible Printing Co.....	Printing.....	9	.....	3	Minors; elevator.....	Complied ..	.....
A. Howells & Co.....	Laundrying	3	15	.....	Machinery .....	.....	.....
H. B. Eckleman.....	Boots and shoes	40	13	2	Minors; elevator.....	Complied ..	.....
Moloney Bros.....	Shoes	30	30	10	Building; mach'y; minors..	Complied ..	.....
Fleegel & Popp..	Coffee roasting	3	.....	.....	Elevator; machinery .....	.....	.....
The Kingey Manufacturing Co...	Ice cream freezers.....	8	.....	.....	" .....	.....	.....
South, Wilhelmadorfer & Co.....	Shoes.....	15	12	1	Minors; ventilation.....	Complied ..	.....
Mrs. R. Schroeder.....	Cigars.....	4	.....	.....	Fire-escape .....	.....	.....
A. Davis's Sons & Co.....	"	35	25	10	Minors	Complied ..	.....
A. L. Wylor.....	Cutting clothing.....	4	.....	.....	.....	.....	.....
E. W. Zumbiel.....	Paper boxes.....	4	9	.....	.....	.....	.....
Jacob Peak & Co.....	Printing.....	10	.....	5	Minors	Complied ..	.....
M. Fisher & Co.....	Cigars.....	12	.....	1	"	Complied ..	.....
John Gales & Co.....	Shoes.....	10	6	.....	Fire-escape .....	.....	.....
The Cincinnati Saddlery Co.....	Saddles, etc.....	45	.....	4	Minors	Complied ..	.....
Bering & Co.....	Shoes	27	23	6	" machinery ..	Complied ..	.....
A. Sommerfeld.....	Cutting clothing.....	7	.....	.....	.....	.....	.....
E. Hamburger & Co..	Cigars	20	20	6	Minors; fire-escape.....	Complied ..	.....
Moers & Manheim	"	20	20	10	" elevator	Complied ..	.....
International Pub. and Print'g Co.	Printing, etc.....	3	4	.....	.....	.....	.....
Grabfield, Sickles & Co.....	Cutting clothing	4	.....	.....	.....	.....	.....
Isaac Hart & Co.....	"	4	.....	.....	.....	.....	.....
Loeb, Wallenstein & Co.....	"	4	.....	.....	.....	.....	.....
Marks Bros. & Marks.....	"	12	.....	.....	.....	.....	.....

Name of Firm	Description of Work	No. of Machines	No. of Men	No. of Boys	No. of Girls	No. of Total	Description of Premises	Date of Inspection	Remarks
A. Webb & Sons.....	Blank-books, etc.....	25	10	6			Complied		
Glaser, Kuder & Co.....	Cutting clothing.....	5					Complied		
F. Holberg & Co.....	"	3					Complied		
Wm. Ronsheim & Bros	"	6					Complied		
A. Hertzog & Co.....	"	7					Complied		
Felber, Silberberg & Co.....	"	5					Complied		
Leon & Metzger.....	"	5					Complied		
Lowman, Sons & Co.....	Clothing	5	60	2			Complied		
M. Wolf & Sons.....	Cutting clothing.....	7					Complied		
Bing, Bruel & Co.....	"	8					Complied		
Darmer Bros.....	Hosiery	4	40	20			Complied		
Bettman Bros.....	Cutting clothing.....	5					Complied		
Macneal & Urban.....	Safes, etc.....	187					Complied		
A. Rosenthal.....	Hosiery	2	25	6			Complied		
Mosler Safe and Lock Co	Safes, etc	375					Complied		
Isaac Herman.....	Cutting clothing.....	8					Complied		
L. Newberger.....	Cigars	40	70	10			Complied		
Michaels & Schureman.....	Brass trimmings.....	20					Complied		
Dietz, Ignatius & Co.....	Office furniture.....	40					Complied		
E. H. Walton.....	Architectural iron work.....	6					Complied		
F. Miller & Co.....	Vinegar	7					Complied		
George Enger & Co.....	Carriages.....	112	5	15			Complied		
C. S. Rankin & Co.....	Mantels	8					Complied		
J. Gilsey.....	Shoes	9	6	6			Complied		
J. G. Isham & Co.....	Gas fixtures.....	10					Complied		
Improved Sole Leather Co.....	Shoe soles.....	10	6	18			Complied		
T. J. Smith, Print. and Pub. Co ..	Printing.....	13					Complied		
Warley, Detchen & Co.....	"	13	1	6			Complied		
Hall's Safe and Lock Co.....	Safes, etc.....	742					Complied		
Telegram Publishing Co.....	Newspaper						Complied		
James Hukin & Co	Coffee roasting	25	10	10			Complied		
E. J. Wilson & Co.....	"	13	1				Complied		
J. H. Gray & Co	Tinware	12					Complied		
B. McMeekin & Co.....	"	5					Complied		
Stearns, Foster & Co	Cotton wadding, etc.....	50					Complied		
Christina Choelkops	Clothing	1	4	2			Complied		
Jacob Smith.....	"	1	8	2			Complied		
Ellis Schneider	"	1	4				Complied		

CINCINNATI—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
Z. Rudman	Clothing	2	16	5	Minors	Complied ..	.....
Metz & Breitfield	"	2	11	2	"	Complied ..	.....
H. Klein & Son	Hosiery	10	150	60	"	Complied ..	.....
Pearce, Atkins & Co.	Cotton belting	25	70	30	"	Complied ..	.....
Mrs. Laura Guthardt	Clothing	3	15	7	"	Complied ..	.....
Emerson, Fisher & Co.	Carriages	400	30	95	"	Complied ..	.....
Boak & Miller	Job printing	6	.....	2	"	Complied ..	.....
Utter & Chamberlain	Coffee roasting, etc.	18	.....	.....	Fire-escape .....	.....	.....
D. Foerster	Crackers, etc	25	.....	2	Minors	Complied ..	.....
Rheinhardt & Newton	Candies	20	10	4	"	Complied ..	.....
P. J. Sorg & Co	Tobacco stemming	18	89	22	Minors; fire-escape; elevator	Complied ..	.....
The O'Neal and Price Co	Leather belting	10	.....	.....	Fire-escape .....	.....	.....
Chas. Kaiper	Upholstering	17	.....	3	Minors; fire-escape	Complied ..	.....
Robt. Hesterberg & Co.	Brass goods	17	.....	2	"	Complied ..	.....
The Raymond Bag Co.	Paper bags	5	7	3	"	Complied ..	.....
J. R. Kemper	Job printing	5	.....	2	"	Complied ..	.....
John Steptoe & Co	Machinery	15	.....	1	"	Complied ..	.....
M. A. Hunt Manufacturing Co.	Furniture, etc	50	.....	20	" building	Complied ..	.....
Sebastian May & Co.	Lathes	21	.....	4	"	Complied ..	.....
Jas. Mayer Manufacturing Co.	Carriages	40	1	2	"	Complied ..	.....
The Gowan Pump Co.	Steam pumps	13	.....	.....	Building .....	.....	.....
Cincinnati Tool Co.	Carpenters' tools	26	.....	5	Minors	Complied ..	.....
Walker & Havlin	Patterns	6	.....	.....	Machinery; emery-wheels ..	.....	.....
Globe Foundry Co	Pulleys, hangers, etc.	28	.....	.....	Minors	Complied ..	.....
The Singer Manufacturing Co	Setting up sewing machines..	11	.....	3	Building .....	.....	.....
D. K. Norton & Son	Saw mills, etc	7	.....	.....	Minors; building	Complied ..	.....
Searl & Todd	Turning wood	3	.....	1	"	Complied ..	.....
Wm. Oesterlein & Jos. Muenfeld..	Machinery	2	.....	2	"	Complied ..	.....

H. J. Cordesman & Son	Machinery	8	.....	.....	Building .....	.....	.....
E. M. Moers	Paper stock and rags.....	4	35	.....	Minors	Complied ...	.....
Thomas Morris	Tiles	20	.....	3	"	Complied ...	.....
H. Closterman.....	Upholstering	40	15	23	" elevator	Complied ...	.....
P. J. Dunn	Brass forging	4	.....	2	"	Complied ...	.....
Post & Co	Glass engraving.....	2	.....	.....	.....	.....	.....
McFarland & Nottingham Co.....	Machinery	6	.....	.....	.....	.....	.....
John M. Wood	Patterns	2	.....	.....	.....	.....	.....
J. J. Spilker	Machinery	5	.....	.....	.....	.....	.....
John Kuehnle.....	Machine knives.....	5	.....	.....	.....	.....	.....
G. T. Latta	Dies.....	2	.....	.....	.....	.....	.....
The Lomas Bridge Co	Bridges.....	80	.....	3	Minors; elevator.....	Complied ...	.....
Sangandorf Corrugating Co	Corrugated roofing.....	20	.....	2	"	Complied ...	Complied.
H. Bade & Son	Tobacco	3	5	2	"	Complied ...	.....
J. M. Robinson & Co	Die presses.....	32	6	6	"	Complied ...	.....
Central Furniture Co	Furniture	13	.....	.....	Fire-escape.....	Complied ...	Complied.
Am. R'y & Commercial Adv'g Co.	Glass signs, etc	14	2	1	Minors; fire-escape	Complied ...	.....
W. W. Spence & Son.....	Pickles, etc.....	6	12	1	"	Complied ...	.....
J. A. Fingling	Pumps, etc	13	.....	.....	.....	.....	.....
J. M. Long	Soap	2	.....	.....	Machinery; elevator.....	.....	.....
Anchor Mustard Co.	Grocer sundries.....	5	6	.....	.....	.....	.....
A. L. Dunlap & Co.....	Tobacco	18	10	4	Minors; elevator	Complied ...	.....
H. R. Draste & Co	Coffee roasting, etc.	11	.....	1	"	Complied ...	.....
Noeber, Wehmiere & Co.....	Mantels, etc	11	.....	2	"	Complied ...	.....
Sol. E. Bacharach.....	Hosiery	5	35	10	"	Complied ...	.....
Chas. Nagel	Cigars.....	6	1	.....	.....	.....	.....
Van Duzen & Tift.....	Bells, etc	15	.....	.....	Emery-wheels .....	.....	.....
Wm. Kuhn	Laundrying	2	7	.....	Ventilation .....	.....	.....
Meyer, Nagel & Co.....	Cigar boxes, etc.....	39	13	8	Minors; elevator; fire-escape; machinery	Complied ...	.....
Dugganer	Paper stock.....	3	4	.....	.....	.....	.....
Hoeflinghoff & Lau	Iron castings	225	.....	.....	Emery-wheels .....	.....	.....
Folding Hat Rack Co	Hat racks, etc.....	20	.....	15	Minors; fire-escape	Complied ...	.....
Elias Ehler	Builders' wood-work	32	.....	.....	Machinery .....	.....	.....
Bickford Drill Co	Drills, etc	22	.....	1	Minors	Complied ...	.....
Queen City Bridge and Steam Forging Co	Bridges, forging, etc.....	24	.....	2	"	Complied ...	.....
Cincinnati Pattern Works	Patterns.....	13	.....	1	"	Complied ...	.....
Cheshire & Stedman.....	"	3	.....	.....	.....	.....	.....
H. J. McKeown	Machinery	6	.....	1	Minors	Complied ...	.....

CINCINNATI—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
E. W. Armacost.....	Patterns.....	7			.....	.....	.....
Bourbon Copper and Brass Works	Copper and brass goods.....	27			.....	.....	.....
The Cordesman Co.....	Wood-working machinery...	25		2	Minors.....	Complied...	.....
Sam'l Williamson.....	Iron castings, etc.....	13			.....	.....	.....
The I. & E. Greenwald Co.....	Foundry and machine work	150			.....	.....	.....
Tudor Boiler Manufacturing Co...	Boilers, etc.....	30		4	Minors.....	Complied...	.....
McIlvain & Speigle.....	".....	55		5	" machinery.....	Complied...	.....
Standard Carriage Goods Co.....	Carriage trimmings.....	40	5	25	".....	Complied...	.....
Honhorst, Littleford & Co.....	Sheet-iron work.....	12			Machinery.....	.....	.....
Robert Jones & Co.....	Steam boilers, etc.....	15		2	Minors; building.....	Complied...	.....
J. C. Heidrich.....	Cigars.....	6		1	" fire-escape.....	Complied...	.....
W. H. Harris & Co.....	Coffee roasting, etc.....	6	1		Fire-escape.....	.....	.....
Buhr & Wendt.....	Confectionery.....	10	8	6	Minors; fire-escape.....	Complied...	.....
Bradford Belting Co.....	Belting.....	7			.....	.....	.....
Joseph Sharp.....	".....	15			.....	.....	.....
Geo. B. Massey.....	Printing.....	5		3	Minors.....	Complied...	.....
Diem & Bickle.....	Paper bags, etc.....	9	4		.....	.....	.....
Cincinnati Tin and Japan Co.....	Tin and Japan goods.....	25		3	Minors; elevator.....	Complied...	.....
Beidinger, Selbert & Co.....	Flour sacks, etc.....	8	5	6	".....	Complied...	.....
John McHale.....	Brooms.....	6		2	" elevator.....	Complied...	.....
Herman Gilsey.....	Cigars.....	3		1	".....	Complied...	.....
Henry V. Wagner.....	".....	10		1	".....	Complied...	.....
A. W. Lett.....	".....	3		1	" elevator.....	Complied...	.....
The Globe Soap Co.....	Soap.....	30		1	" fire-escape.....	Complied...	.....
Kingsville Basket Co.....	Baskets.....	13		8	" elevator.....	Complied...	.....
H. J. Frisbee.....	Machinery.....	6			.....	.....	.....
R. B. Stevenson.....	Printing.....	4		1	Minors; fire-escape.....	Complied...	.....
A. J. Clark.....	Shirts.....	3	15		.....	.....	.....

W. A. Clark	Laundrying	2	25	1	Minors; ventilation.....	Complied
C. T. Woodrough & Co.....	Blank-books	45	10	10	"	Complied
Cook & Benkert	Trunks.....	20	.....	2	"	Complied
John R. Davey & Co.....	Book-binding.....	68	81	20	"	Complied
Van Antwerp, Bragg & Co.....	School books	50	5	6	"	Complied
H. C. Scherick	Book-binding, etc	12	10	6	"	Complied
The Pugh Printing Co.....	Printing	55	8	6	" elevator	Complied
Keating & Co	"	15	1	3	"	Complied
Carpenter & Ranshaw.....	Blank-books, etc	17	7	3	"	Complied
Henry Wagner	Trunks	6	.....	.....	.....	.....
Brennan & Butler	Blank-books, etc	7	9	2	Minors	Complied
The L. Schreiber & Sons Co ..	Builders' iron work	140	.....	9	" machinery	Complied
L. Beaupre	Shoes	8	4	.....	.....	.....
The Globe Carriage Co	Carriages.....	55	3	10	Building; elevator; fire-es- cape; minors.....	Complied
George Beinert.....	Printing.....	3	.....	1	Minors	Complied
B. Veerkamp & Son.....	Carriages.....	40	.....	4	"	Complied
Cincinnati Stamping Co.....	Tinware, etc.....	65	.....	15	"	Complied
Charles W. Brenneman	Window shades	12	1	1	"	Complied
C. J. Krebiel & Co.....	Printing and binding.....	70	50	10	" machinery	Complied
Cincinnati Manufacturing Co.....	Brushes	18	.....	4	"	Complied
Charles H. Wust & Co	Hosiery	3	7	2	"	Complied
Allen Collier	Printing	6	.....	3	"	Complied
A. Lotz & Son	Furnaces, etc	25	.....	4	"	Complied
William Ewing & Co	Hats	3	1	.....	.....	.....
F. Sellenings	Book-binding	3	4	3	Minors	Complied
The Geise Cigar Box Co.....	Cigar boxes.....	12	10	6	"	Complied
The Arbeiter Zeitung	Newspaper	33	.....	3	"	Complied
The Phoenix Manufacturing Co...	Furniture	65	.....	4	Building; minors; machi- nery; elevator	Complied
B. Klinker & Co	Chairs	25	2	8	Minors; elevator	Complied
Continental Furniture Co	Furniture	40	.....	6	"	Complied
Robert Mitchell Furniture Co ..	"	450	14	25	"	Complied
J. A. Fay & Co.....	Wood-working machinery...	240	.....	6	"	Complied
The Peerless Wringer Co.....	Clothes wringers	45	.....	4	" machinery	Complied
Straub Machinery Co	Flour mill machinery	30	.....	.....	.....	.....
George Feldkamp.....	Chairs	75	35	15	Minors	Complied
Kroeyer & Sabbert.....	Furniture	45	.....	6	"	Complied
Robert Mitchell Furniture Co ..	Veneers.....	22	.....	1	"	Complied
Meador Furniture Co	Furniture	100	1	2	"	Complied

CINCINNATI—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
H. Closterman	Chairs, etc.	165	.....	15	Machinery; minors; elevator	Complied ..	.....
Joseph Josephs & Bro.	Cotton waste	25	.....	2	Minors; building	Complied ..	.....
Radcliff & Rowe	Saws	10	.....	1	"	Complied ..	.....
J. H. McGowan & Co.	Hydraulic presses, etc.	65	.....	6	" elevator	Complied ..	.....
J. Dyett & Co.	Stoves	53	.....	1	" machinery	Complied ..	.....
John Schwarte	Cigars	4	.....	1	"	Complied ..	.....
S. C. Tatum	Iron castings	83	.....	3	" building	Complied ..	.....
Mendenhall Caster Co.	Casters	22	.....	6	"	Complied ..	.....
Lane & Bodley	Machinery	275	.....	4	" machinery	Complied ..	.....
The Egan Co.	Wood-working machinery ..	210	.....	12	"	Complied ..	.....
Dietz & Will.	"	11	.....	1	" fire-escape	Complied ..	.....
Robert Glier	Musical instruments	3	.....	.....	.....	.....	.....
Crescent Printing Co.	Printing	5	.....	1	Minors; fire-escape	Complied ..	.....
Joseph Huth	Brushes	10	.....	6	"	Complied ..	.....
J. Weller & Co.	Sorting peanuts, etc.	3	25	20	" building	Complied ..	.....
Skaats, Edwards & Co. ....	" .....	.....	14	8	"	Complied ..	.....
G. H. Gilbert & Co. ....	" .....	.....	12	12	"	Complied ..	.....
The Cincinnati Baking Co.	Crackers, etc.	15	7	9	"	Complied ..	.....
W. H. Sloan	Printing	8	.....	1	"	Complied ..	.....
Cin'ti Woven Wire Mattress Co..	Wire mattresses	3	2	3	"	Complied ..	.....
Cincinnati Safe and Lock Co.	Safes, etc.	85	.....	3	.....	Complied ..	.....
James L. Haven & Co.	Agricultural implements....	275	.....	25	Machinery; minors; build'g	Complied ..	.....
Cincinnati Screw and Tap Co.	Screws, etc.	30	.....	5	Minors; fire-escape	Complied ..	.....
Buschle & Wuest	Wagon hubs, etc.	10	.....	.....	Machinery .....	.....	.....
Jewett & Adams	Sacks	20	13	15	Minors	Complied ..	.....
Haas Bros	Cigars	60	85	20	" elevator	Complied ..	.....
R. T. Marris	Printing	20	1	4	"	Complied ..	.....
C. H. Reinhart	Candies	5	2	1	"	Complied ..	.....

Mente & Co	Gunny bags	6	20	5	Minors; fire-escape	Complied
J. J. Perkins	Candies, etc	9	3	2	Building; elevator; minors ..	Complied
Gale Bros	Flour packers	4	.....	.....	Fire-escape; elevator .....	.....
Baldrige & Hogan	Saws	20	.....	.....	Building .....	.....
Allison & Smith	Type	168	25	25	Minors	Complied
Ehrhart & Richardson	Job printing	8	.....	2	"	Complied
W. A. McCord & Co	Engravings, etc	4	.....	1	" fire-escape	Complied
F. T. Foster	Awnings, etc .....	.....	3	.....	Fire-escape .....	.....
George Hermann	Jewelry	10	1	3	Minors	Complied
H. Keck Manufacturing Co	"	26	4	2	"	Complied
Lucius & Co	"	4	.....	1	"	Complied
E. J. Koerlein	Metal engraving	2	.....	1	" fire-escape	Complied
Charles G. Neubauer	Watch case engraving	3	.....	2	"	Complied
Adler & Co	Woolen jeans, etc	100	100	100	Minors; machinery	Complied ..
Fred. Weber & Bro	Builders' wood-work	15	.....	.....	Machinery	Complied ..
Caleb Lingo & Co	"	23	.....	1	Minors; machinery	Complied ..
J. D. Hart	Laundrying	2	9	.....	Building .....	.....
J. C. Tarrant	Shoes	24	22	20	Minors; machinery	Complied ..
Cincinnati Type Foundry	Printers' supplies	155	8	10	"	Complied ..
S. Rosenthal & Co	Printing and binding	27	5	4	"	Complied ..
McKay & Co	Electrotype plates ..	4	.....	2	" building	Complied ..
H. Rosenbaum & Co	Cloaks, etc	25	75	6	"	Complied ..
Stix, Krouse & Co	Clothing cutting	15	.....	.....	Elevator .....	.....
Phillip Volkert	Hats	6	2	2	Minors	Complied ..
MacBriar Lithograph Co	Lithographing, etc	19	.....	6	"	Complied ..
Ohio Valley Manufacturing Co ..	Printing and binding	51	32	12	" elevator	Complied ..
Spencer & Kraig Printing Co ..	Printing	18	4	1	" machinery	Complied ..
Williams Bros	"	3	3	1	"	Complied ..
Noterman & Jonas	Jewelry	18	6	4	"	Complied ..
James Murdock, Jr	Stencils, etc	40	.....	10	"	Complied ..
Lowry & Goeble	Carpet fitting	8	14	.....	Fire-escape .....	.....
W. H. Hoofman	Binding	3	4	2	Minors; fire-escape	Complied ..
Pettibone Manufacturing Co	Society goods	60	240	30	"	Complied ..
L. Salinger	Cigars	6	15	5	" fire-escape; eleva'r ..	Complied ..
Perkins & Stevenson	Laundrying	5	31	1	Fire-escape; minors; venti'n	Complied ..
P. T. Schultz	Printing	6	.....	3	Minors	Complied ..
P. G. Thompson	Book publisher	40	50	15	" elevator	Complied ..
J. R. Baumes	Printing	6	.....	1	" fire-escape	Complied ..
Acme Printing Co	"	7	4	3	"	Complied ..
A. Helberg	Hair work	2	10	1	"	Complied ..

CINCINNATI—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
Frank Egner	Brushes, etc	4	1	2	Minors	Complied ..	.....
Elm Street Printing Co	Printing, etc	50	14	10	"	Complied ..	.....
P. Nelson & Co	Hair work .....	.....	4	.....	Fire-escape .....	.....	.....
Gibson & Co	Art publications	12	12	4	Minors	Complied ..	.....
A. W. Amburg	Hosiery .....	.....	45	15	" fire-escape	Complied ..	.....
G. Henshaw & Sons	Chairs, etc	175	40	40	Machinery; minors; fire-esc ..	Complied ..	.....
Strobridge Lithographing Co	Lithographs, etc	120	2	15	Minors; elevator	Complied ..	.....
L. A. Strobel	Picture frames, etc	100	6	40	"	Complied ..	.....
A. Squire	Music printing	13	.....	4	"	Complied ..	.....
H. Miller	Gold and silver plating	15	1	2	" machinery	Complied ..	.....
Joseph Smith	Laundrying	2	30	2	" elevator; ventilat'n ..	Complied ..	.....
Knight & Co	Printing	21	.....	4	" elevator	Complied ..	.....
James Barclay	"	10	1	3	"	Complied ..	.....
Jos. Scheid	Parlor frames	40	.....	6	" machinery; fire-esc ..	Complied ..	.....
Pope Bros. & Kugeeman	Picture frames	80	12	30	"	Complied ..	.....
T. T. Haydock Carriage Co	Carriages, etc	300	25	30	" mach'y; elevator ..	Complied ..	.....
W. H. Stewart's Sons	Builders' wood-work	25	.....	3	" machinery	Complied ..	.....
J. G. Beck & Bro	Wooden boxes	6	.....	1	"	Complied ..	.....
Geo. C. Beck & Co	"	10	.....	1	"	Complied ..	.....
Peter De Roo	Brooms	20	.....	1	"	Complied ..	.....
J. Rosenthal	Picture frames	35	8	2	"	Complied ..	.....
B. H. Lamping & Co	Soaps, etc	7	.....	.....	.....	.....	.....
Chas Seybold	Machinery	10	.....	4	Minors; machinery	Complied ..	.....
W. J. Quarry	Map mounting	10	2	7	"	Complied ..	.....
B. Meyer	Brooms	14	.....	3	"	Complied ..	.....
Standard Printing Ink Works	Printing inks	6	.....	.....	.....	.....	.....
Julius Zesterman	Jewelry, etc	5	.....	2	Minors; machinery; fire-esc ..	Complied ..	.....
S. W. Trost	Cigar boxes	50	40	25	"	Complied ..	.....

A. Gunklach	Billiard tables	5	.....	.....	Fire-escape .....	.....	.....
M. Mailander	Rag sorting	2	.....	2	" .....	.....	.....
Chas. G. Beidinger	Paper bottle wrappers	10	.....	.....	Minors	8	Complied ..
Mollenkamp & Binne	Washing machines	5	.....	.....	Fire-escape .....	.....	.....
The Royer Wheel Co	Carriage wheels, etc.	140	.....	.....	Minors; machinery	20	Complied ..
Wm. Mayer	Builders' wood-work	37	.....	.....	Machinery; fire-escape .....	.....	.....
A. L. Knoblauch Co	Carriage wood-work	80	.....	.....	Minors; machinery; elevator	6	Complied ..
Mills, Spellmire & Co	Builders' wood-work	30	.....	.....	" .....	2	Complied ..
C. E. Jones & Bro	Telegraph supplies, etc.	25	.....	.....	" .....	7	Complied ..
Campbell & Co	Electrotyping	20	.....	.....	" .....	5	Complied ..
McDonald & Eick	Printing	15	.....	.....	.....	.....	.....
Jones Bros	Book publishers	10	.....	2	.....	.....	.....
Jas. A. Cassidy	Book-binding	20	.....	16	Minors	2	Complied ..
Lewis C. James & Co	Printers' and binders' suppl's	6	.....	.....	" .....	1	Complied ..
John Rowell	Book-binding	4	.....	6	"	3	Complied ..
Cohen & Co	Printing	50	.....	3	"	5	Complied ..
The Stacey Manufacturing Co	Architectural iron, etc	100	.....	.....	" .....	2	Complied ..
The Weir Frog Co	Railroad frogs, etc	50	.....	.....	Machinery .....	.....	.....
Smith, Meyers & Schnier	Machinery	55	.....	.....	Minors	1	Complied ..
Williams & Co	Printing	14	.....	.....	" .....	1	Complied ..
George Scott	Pottery	60	.....	13	"	12	Complied ..
Globe Rolling Mill Co	Iron	200	.....	.....	" .....	10	Complied ..
J. W. Foley & Co	Iron castings	97	.....	.....	" .....	2	Complied ..
The Union Laundry	Laundrying	3	.....	17	.....	.....	.....
The Alba Lamp Co	Lamps	14	.....	.....	Fire-escape .....	.....	.....
W. W. Magill & Sons	Mantels and grates	25	.....	.....	Machinery .....	.....	.....
Miller & Buchanan	Saddle trees	30	.....	1	Minors; machinery	3	Complied ..
P. Wilson's Sons & Co.	Saddlery hardware, etc.	100	.....	8	"	30	Complied ..
Morman & Koch	Mantels	13	.....	.....	Fire-esc'e; elevator; ventil'n .....	.....	.....
Front Street Furniture Co	Furniture	35	.....	.....	Minors; elevator; mach'y	5	Complied ..
Western Wood Carving Co	Wood carving	8	.....	.....	" .....	1	Complied ..
Chas. C. Jacobs' Cordage Co	Cordage	44	.....	23	"	25	Complied ..
Chas. C. Jacobs' Cordage Co	Rope, etc	24	.....	.....	" .....	13	Complied ..
Central Furniture Association	Furniture	50	.....	5	"	5	Complied ..
E. D. Albro & Co	Veneers, etc	110	.....	.....	" .....	40	Complied ..
Queen City Foundry Co	Iron castings	40	.....	.....	" .....	6	Complied ..
Hunter Scale Co	Scales	7	.....	.....	" .....	1	Complied ..
American Carriage Co	Carriages	28	.....	1	"	2	Complied ..
I. V. Sutphin	Paper stock	2	.....	20	"	2	Complied ..
Cincinnati Chair Co	Chairs	38	.....	20	"	7	Complied ..

CINCINNATI—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
Eckstein White Lead Works	Leads	150	.....	2	Minors; machinery	Complied ..	.....
J. W. & G. T. Robinson ..	Millwork for builders	53	.....	4	"	Complied ..	.....
Droste Milling Co.....	Flour, etc.....	14	.....	2	" elevator	Complied ..	.....
Crane and Reed Manufact'g Co...	Undertakers' supplies	264	38	25	"	Complied ..	.....
Warren Warner	Elevators	25	.....	.....	.....	.....	.....
Thos. Kelsal	Furniture	60	.....	2	Minors; mach'y; fire-escape	Complied ..	.....
Kelsal & Garrison.....	Extension tables.....	20	.....	1	" machinery	Complied ..	.....
Phoenix Carriage Co	Carriages	18	.....	1	"	Complied ..	.....
J. B. Dodds & Son	Iron castings	37	.....	.....	.....	.....	.....
Cincinnati Ice Machine Co	Ice machines	150	.....	.....	Elevator ..	.....	.....
M. Clements.....	Architectural iron work	68	.....	.....	.....	.....	.....
Louis Kipp	Packing boxes	6	.....	.....	Machinery .....	.....	.....
E. R. Loughhead & Co	Builders' wood-work	62	.....	2	Minors; mach'y; elevator ..	Complied ..	.....
Electric seamless Hosiery Co	Hosiery	5	45	12	" fire-escape	Complied ..	.....
Steinman & Meyers	Furniture	65	.....	3	"	Complied ..	.....
Anchor Buggy Co.....	Carriages	35	1	3	" elevator ..	Complied ..	.....
Barret & Dole	Chairs, etc	33	.....	3	" " mach'y	Complied ..	.....
J. W. Moffatt	Builders' wood-work	21	.....	1	"	Complied ..	.....
A. M. Dolph	Laundrying	4	19	1	" machinery	Complied ..	.....
The A. M. Dolph Co	Laundry machinery	40	.....	3	"	Complied ..	.....
Kreimer & Bro	Furniture	137	.....	10	"	Complied ..	.....
Folding Hat Rack Co	Hat racks, etc .....	.....	.....	.....	Fire-escape; elevator .....	.....	.....
Scherder, Rusche & Co.....	Shoes	20	12	3	Minors; ventilation.....	Complied ..	.....
The Gainsford Carriage Co	Carriages	131	.....	3	"	Complied ..	.....
Geo. P. Vicken	Steam pipe fitting, etc.....	9	.....	2	" building.....	Complied ..	.....
Wm. Cosgrove & Co	Shoes ..	50	32	12	"	Complied ..	.....
Geo. C. Miller's Sons Carriage Co.	Carriages ...	75	.....	4	"	Complied ..	.....
The Physicians' Supply Co ...	Physicians' instruments	4	2	1	Machinery; minors	Complied ..	.....

A. Hempling	4	Patterns.....	1	Minors	Complied...	.....
R. Kirkus & Co	22	Brass goods.....	4	Elevator; minors; mach'y ..	Complied...	.....
Russell & Morgan Printing Co	150	Job printing.....	10	Minors	Complied...	.....
F. Lunkenheimer.....	140	Brass goods.....	8	" machinery; elevator	Complied...	.....
The Frey Printing Co	50	Printing.....	6	"	Complied...	.....
J. B. Schroeder & Co	30	Builders' hardware	5	" machinery	Complied...	.....
Homan & Co	40	Silver plated ware	8	"	Complied...	.....
G. D. Winchell Manufacturing Co	60	Tinware.....	20	" building.....	Complied...	.....
Mosler, Bohman & Co.....	100	Safes, etc.....	3	" elevator	Complied...	.....
Eugene Berninghan.....	60	Furniture	8	" mach'y; elevator.....	Complied...	.....
Standard Wagon Co.....	369	Carriages, etc.....	40	"	Complied...	.....
The J. W. Marcy Co.....	90	Carriage wood-work.....	6	"	Complied...	.....
Knoblauch & George Furn. Co....	50	Furniture	4	" elevator	Complied...	.....
The U. S. Bung Co.....	65	Bungs.....	30	" machinery ..	Complied...	.....
The Miller Machine Tools Co.....	14	Machine tools.....	3	"	Complied...	.....
The Bradford Mill Co.....	40	Flour mill machinery.....	.....	.....	.....	.....
The P. J. Marqua M'fg Co.....	37	Children's carriages, etc.....	.....	Fire-escape .....	.....	.....
Wm. Resor & Co.....	250	Stoves.....	2	Minors	Complied...	.....
The Cincinnati Spring Co.....	80	Carriage springs.....	12	" machinery	Complied...	.....
Golden Eagle Buggy Co.....	50	Carriages.....	4	" elevator	Complied...	.....
Queen City Printing Ink Works..	24	Printing inks.....	.....	Machinery .....	.....	.....
Sportsmans' Shot Co.....	11	Shot and lead traps.....	.....	" .....	.....	.....
The Cincinnati Coffin Co.....	222	Coffins, etc.....	30	Minors; machinery	Complied...	.....
Western Tin and Japan M'fg Co.	11	Tinware.....	4	"	Complied...	.....
Bering & Co.....	25	Shoes	6	" building.....	Complied...	.....
Richter & Co.....	25	Brass goods.....	15	" elevator	Complied...	.....
J. Molloney & Bros.....	38	Shoes	14	"	Complied...	.....
The Guide Printing and Pub. Co.	20	Printing, etc	5	"	Complied...	.....
W. W. & J. W. Crothers.....	2	Laundrying .....	.....	.....	.....	.....
The Standard Publishing Co.....	16	Printing, etc.....	35	.....	.....	.....
Wm. Becker & Co	31	Furniture ..	4	.....	.....	.....
Stille & Duhlmeier.....	95	" .....	.....	Minors; mach'y; elevator...	Complied...	.....
A. Renesch & Co.....	45	" .....	.....	" building.....	Complied...	.....
R. Rover..	22	"	3	" machinery	Complied...	.....
Streit & Schmit.....	73	"	10	"	Complied...	.....
The American Oak Leather Co....	400	Leather	25	" elevator	Complied...	.....
John Roberts.....	8	Carriages.....	.....	.....	.....	.....
The Cincinnati Furniture Co.....	65	Furniture	6	Minors; machinery.....	Complied...	.....
Henry Varwig & Co.....	42	Beer faucets, etc.....	2	"	Complied...	.....
Berens, Bingham & Co.....	100	Furniture	25	"	Complied...	.....

CINCINNATI—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
G. Vehr & Co.....	Furniture	40	.....	2	Minors	Complied ..	.....
F. J. Rennekamp & Bro.....	"	67	.....	6	"	Complied ..	.....
Henry Hoffeld.....	"	12	.....	4	"	Complied ..	.....
Harris Levy.....	Clothing	7	30	6	"	Complied ..	.....
H. T. Kemper.....	Furniture	8	.....	1	" machinery	Complied ..	.....
L. G. Schaeffer & Co.....	Mantels and grates.....	110	.....	2	Machin'y; minors; elevator; fire-escape.....	Complied ..	.....
J. Dornette & Bro.....	Office furniture.....	40	.....	8	Minors	Complied ..	.....
Maxwell, Ginter & Co.....	Builders' wood-work.....	25	.....	3	" mach'y; fire-escape..	Complied ..	.....
Liberty Furniture Co.....	Furniture	42	.....	2	" "	Complied ..	.....
G. W. Stark	Builders' wood-work.....	33	.....	2	" elevator	Complied ..	.....
Phillip Heisel.....	Woodturning.....	7	.....	1	"	Complied ..	.....
M. Droesch.....	Furniture	16	.....	3	"	Complied ..	.....
A. Messman	Brass goods	22	6	8	"	Complied ..	.....
H. J. F. Wolf.....	Laundrying	8	34	.....	Elevator .....	.....	.....
Wm. Aufderheide & Co.....	Carriages	35	1	1	Minors	Complied ..	.....
John Auel.....	"	40	1	10	"	Complied ..	.....
Harris Levy.....	Clothing	7	30	6	"	Complied ..	.....
Wm. Dock & Co	Soaps	3	1	.....	.....	.....	.....
Eugene Zugelten.....	Lounge frames.....	7	.....	.....	Machinery .....	.....	.....
Hillman & Poos.....	Stairs	13	.....	2	Minors	Complied ..	.....
Foulds & Co	Flour, etc.....	12	3	.....	Elevator; fire-escape.....	.....	.....
The Standard M'fg Co.....	Fire-proof safes.....	18	.....	2	Minors	Complied ..	.....
Excelsior Co-operative Box Co...	Packing boxes.....	13	.....	.....	Machinery .....	.....	.....
John J. Bronnert.....	Wood turning.....	8	.....	6	Minors	Complied ..	.....
Duchscher & Mischel	Furniture	14	.....	.....	Machinery .....	.....	.....
H. H. Wiggers & Co.....	"	60	.....	4	Minors; machinery	Complied ..	.....
The F. C. Deckebach Sons Co. ...	Copper and brass kettles.....	45	.....	3	"	Complied ..	.....

The P. Eckert Co.	Candy	50	37	16	Minors	Complied ...	.....
The Cincinnati Lithographing Co.	Lithographing, etc.....	27	5	10	“ mach’y; building...	Complied ...	.....
E. Hart.....	Clothing	6	29	.....	Fire-escape .....	.....	.....
Queen City Forging Co.....	Carriage hardware.....	75	.....	20	Min’rs;mach’y;em’ry-wh’ls..	Complied ...	.....
The Henderson Achert Co.....	Printing..	70	8	25	Minors; building.....	Complied ...	.....
D. S. Johnston & Co.....	Pianos tuned.....	2	.....	.....	Elevator.....	.....	.....
Dischner & Short..	Builders’ wood-work.....	20	.....	.....	Machinery .....	.....	.....
Hirsch & Richert.....	“	25	.....	.....	“ .....	.....	.....
G. Lautenschlager	Jewelry	12	1	1	Minors ....	.....	.....
Peter Ibold.....	Cigars.....	15	.....	5	“	Complied ...	.....
Armleder & Co.....	Carriages, etc.	15	.....	.....	Elevator; building	Complied ...	.....
Stephens Bros.....	Glue	45	.....	10	Minors; elevator	Complied ...	.....
H. & G. A. Roever	Soaps	8	2	1	“	Complied ...	.....
Sayres & Scoville.....	Carriages	140	7	6	“ machinery	Complied ...	.....
The Wayne Hardware Co.....	Builders’ hardware.....	40	.....	10	“	Complied ...	.....
John Gates & Co.....	Shoes	10	6	.....	Reinspection .....	.....	.....
Hall’s Safe and Lock Co.....	Safes (paint and fin’g room)..	.....	.....	.....	“ .....	.....	.....
E. Hamburger & Co..	Cigars.....	20	20	6	Minors	Complied ...	.....
Bering & Co.....	Shoes	25	25	6	“ ventilation	Complied ...	.....
Peter De Roo.....	Brooms	20	.....	4	“	Complied ...	.....
B. Meyer..	“	14	.....	3	“ fire-escape	Complied ...	.....
E. R. Loughhead & Co.	General wood-work.....	50	1	1	Build’g;mach’y;elev’r,min’s	Complied ...	.....
Woodrough & McParlin.....	Saws... ..	138	.....	20	Minors; machinery	Complied ...	.....
N. Drucker & Co.....	Trunks.....	38	.....	12	“ building.....	Complied ...	.....
M. Benjamin.....	Caps	2	4	3	“ fire-escape.....	Complied ...	.....
L. Jones’ Sons.....	Iron castings... ..	40	.....	2	“	Complied ...	.....
Cincinnati Street Railway Co.....	Street cars and repairs.....	35	.....	.....	Machinery .....	.....	.....
The Sextro Furniture Co.....	Tables, racks, etc.....	80	.....	16	Minors; machinery	Complied ...	.....
Alter, Forwood & Co.....	Boots and shoes..	100	38	5	“	Complied ...	.....
Little Miami Railroad Co	Car and locomotive repairs..	250	.....	.....	.....	.....	.....
J. & J. Grossman.....	Leather	18	.....	.....	.....	.....	.....
Mowry Car Wheel Works.....	Car wheels.....	25	.....	.....	.....	.....	.....
James Mack.....	Lumber, lath, etc.....	12	.....	.....	Machinery .....	.....	.....
C. Crane & Co.....	“	35	.....	2	Minors; machinery	Complied ..	.....
C. W. Leever.....	Packing boxes, etc.....	6	.....	.....	.....	.....	.....
Johnson & Harroun.....	Lumber, lath, etc.....	18	.....	.....	Machinery .....	.....	.....
C. Crane & Co.....	Lumber	21	.....	.....	“ .....	.....	.....
M. M. Dugan..	Packing boxes, etc.....	4	.....	1	Minors; machinery	Complied ...	.....
Cincinnati Dry Dock Co.....	Lumber, lath, etc.....	28	.....	.....	Machinery .....	.....	.....
Standard Harness Co.....	Harness, etc.....	58	1	3	Minors; elevator	Complied ...	.....

Hauke Bros	Dry goods	20	.....	.....	.....
Wurst & Lorentz	Furnishing goods	3	.....	.....	.....
Honkomp & Stagge	Dry goods.....	3	.....	.....	.....
J. H. Gohs	"	2	.....	.....	.....
A. Schmidt & Co.....	"	6	.....	.....	.....
Geo. F. Grassel & Co.....	"	3	.....	.....	.....
Papenbrock & Co	Cloaks and notions.....	60	.....	.....	.....
The John Shillito Co.....	Dry goods.....	275	.....	.....	.....
Alms & Doepke	"	100	.....	.....	.....
The F. W. Alms Manufact'g Co.,	Furniture	65	.....	.....	.....
The John Shillito Co.	General manufacturing.....	20	.....	.....	.....
Cincinnati Barbed Wire Fence Co	Barbed wire, etc	50	.....	.....	.....
The John Shillito Co.....	Ladies' dresses, etc.....	10	.....	.....	.....
H. Belmer & Co	Wire goods, etc.....	100	.....	.....	.....
Schweitzer & Senger	Job printing.....	3	.....	.....	.....
Volksblatt.....	Printing.....	85	.....	.....	.....
J. R. McLean	"	156	.....	.....	.....

LOCKLAND.

J. H. Tangeman & Co	Paper	17	.....	.....	.....
The Lockland Lumber Co.	Builders' wood-work	50	.....	.....	.....
Crosly & Mitchell.....	Woolen goods	8	.....	.....	.....
The Stearns & Foster Co	Cotton batting.....	75	.....	.....	.....
The Haldeman Paper Co.....	Paper	25	.....	.....	.....
The Geo. H. Friend Paper Co.....	"	22	.....	.....	.....
The Geo. Fox Starch Co	Starch	90	.....	.....	.....
The House & Palmer Co	Flour, etc.....	5	.....	.....	.....
Jas. Whitworth.....	Shoes	6	.....	.....	.....
The Friend & Fox Paper Co.....	Paper	35	.....	.....	.....
The Haldeman Paper Co.....	Brown paper	33

CARTHAGE.

The Carthage Wagon Co	Wagons, etc	80
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READING.

H. Luers & Renneker	Vinegar	6
Henry Pfeiffer.....	Tailoring	3
John Kach	"	3

READING—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
Conrad Ebling	Tailoring	4	17	5	Minors	Complied ..	.....
Wm. Fricker	"	3	13	5	"	Complied ..	.....
The Erkenbecker Starch Co.....	Starch.....	90	17	12	"	Complied ..	.....
RIVERSIDE (P. O., SEDAMSVILLE).							
The Cincinnati Cooperage Co.....	Cooperage	525	.....	40	Minors	Complied ..	.....
IVORYDALE.							
Proctor & Gamble	Soaps, etc	277	106	81	Minors; building	Complied ..	.....

HARDIN COUNTY.

KENTON.

Schwenk & Mouser	Handles	7	.....	.....	.....	.....	.....
Sciote Straw Board Co.....	Straw boards	28	.....	4	Minors; machinery..	Complied ..	.....
Smith & Smith	Bee hives	12	.....	4	"	Complied ..	.....
Curl & Canaan.....	Lumber	17	.....	2	"	Complied ..	.....
G. H. Palmer & Co	"	28	.....	2	"	Complied ..	.....
Young & Bros	"	6	.....	.....	.....	.....	.....
John Callam & Co	Builders' wood-work..	35	.....	.....	.....	.....	.....
Wm. Campbell	Staves and heading	15	.....	3	Minors	Complied ..	.....
Champion Iron Fence Co.....	Iron fence, pumps, etc	100	.....	5	"	Complied ..	.....
Kenton Milling Co.....	Flour, etc.....	6	.....	.....	.....	.....	.....
Kenton Milling Co.....	"	8	.....	1	Minors	Complied ..	.....

HIGHLAND COUNTY.

GREENFIELD.

Wickersham & Robinson	Woolen goods, etc	5	1	.....	Machinery .....	.....
Fish & Barron	Flour, etc.....	3	.....	.....	" .....	.....
E. L. Lowe	Sweat collars	100	50	20	Minors	Complied ..
J. P. Lowe & Co	Carriages, etc.....	12	.....	.....	.....	.....
Elliott & McConnell	Doors, sash, etc	6	.....	.....	.....	.....
Greenfield Enterprise.....	Newspaper	4	.....	.....	.....	.....

LEESBURG.

Hardy Mills	Flour and woolen mills.....	5	.....	.....	.....	.....
The Leesburg Shoe Manufact'g Co	Shoes	30	.....	.....	.....	.....
L. Pensyl & Son	Flour and lumber	4	Former orders.....	Complied.
The Weekly Buckeye	Newspaper	3

EAST MONROE.

Wm. Pope.....	Flour and lumber.....	2
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LYNCHBURG.

Freiburg & Workum	Whiskies.....	60
E. B. Prythero.....	Flour, etc	2

HILLSBORO.

C. A. Roush & Co.....	Lumber	7	.....	.....	Machinery .....	.....
Pence & Simonton	Doors, sash, etc.....	4	.....	.....	" .....	.....
J. S. Ellifritz	Flour, etc.....	13	5	4	Minors	Complied ..
C. S. Bell & Co.....	Cane mills, bells, etc	50	.....	3	"	Complied ..
Hillsboro Gazette.....	Newspaper	5	2	.....	.....	.....
J. M. Boyd & Co	Flour and cooperage ..	15	.....	.....	.....	.....
Richards & Ayres.. ..	Flour, etc	2	.....	.....	.....	.....
Jas. T. McGuire	"	4	.....	.....	.....	.....
R. S. Richards	Cooperage.....	3	.....	.....	.....	.....
Enterprise Planing Mill	Doors, sash, etc	8	.....	.....	.....	.....
Inskeep & Co.....	Flour, etc	3	.....	.....	.....	.....
Carroll & Downham	Carriages, etc	15	.....	.....	.....	.....
The News-Herald.....	Newspaper	4	1	.....	.....	.....
T. McGuire.....	Cigars	3	.....	.....	.....	.....

LOGAN COUNTY.

BELLEFONTAINE.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
A. J. Miller & Co	Carriage wood-work	10	.....	..	.....	.....	.....
Miller Carriage Co	“ bodies	20	.....	.....	.....	.....	.....
Miller Carriage Co	“ wood-work	6	.....	1	Minors; machinery	Complied ..	.....
Williamson & Lesourd	Builders' material	4	.....	.....	.....	.....	.....
The Bellefontaine Carriage Co.....	Carriage wood-work	24	.....	1	Minors; former orders	Complied ..	Complied.
David C. Greer	Lumber, etc	4	.....	.....	Elevator .....	.....	Complied.
Colton Bros	Flour, etc	17	.....	.....	Minors; machinery	Complied ..	.....
Mack, Dickinson & Co.....	Chair stock, etc	30	.....	4	“	Complied ..	.....
Chichester & Haviland	Chairs	35	6	12	.....	Complied ..	.....

MERCER COUNTY.

CELINA.

A. Wykoff & Son	Carriages	10	.....	.....	.....	.....	.....
Eli Bryson	Lumber	5	.....	.....	.....	.....	.....
W. H. Beery	Flour, etc	3	.....	.....	.....	.....	.....
Timmons & Estry	Builders' wood-work	4	.....	.....	Machinery .....	.....	.....
Hoyne & Fauger	Flour, etc	3	.....	.....	“ .....	.....	.....
W. Kreming	Yarns, blankets, etc	3	5	2	Minors	Complied ..	.....
W. B. Winnons	Staves and heading	45	.....	15	Minors; former orders	Complied ..	Complied.
Chris. Max	Lumber	5	.....	.....	.....	.....	.....

MONTGOMERY COUNTY.

DAYTON.

John Rouzer & Co.....	Wood-work	60	.....	.....	Fire-escape .....	.....	.....
Gerher & Kullner	Dyeing	10	1	.....	.....	.....	.....

S. N. Brown & Co.....	Carriage wheels, etc	155	.....	6	Minors; machinery	Complied
Hoefer & Co.....	Wood-work.....	13	.....	.....	.....	.....
Dayton Malleable Iron Works.....	Malleable castings.....	200	.....	12	Minors; machinery	Complied
John Dodds.....	Hay rakes.....	70	.....	2	"	Complied
The Standard Manufacturing Co..	Agricultural implements.....	500	5	24	Fire-escape; ventilat'n; em- ery-wheels; elevator; mn'rs	Complied
Ohio Rake Co.....	"	70	.....	7	Minors; ventilat'n; elevator	Complied
J. R. Johnston & Co.....	Machinery.....	22	.....	.....	.....	.....
J. R. Gebhart & Son.....	Flour, etc.....	4	.....	.....	Machinery .....	.....
R. Barnes.....	Cigar boxes.....	2	3	.....	.....	.....
D. L. Bates & Co.....	Machinery.....	3	.....	.....	.....	.....
Buckeye Iron and Brass Co.....	Brass goods, etc.....	165	.....	4	Minors; elevator.....	Complied
Hoffritz & Kyer.....	Cigar boxes, etc.....	10	10	2	"	Complied
Joyce, Oridlend & Co.....	Lifting jacks.....	12	.....	.....	.....	.....
Wood, Archer & Co.....	Linseed oil.....	9	.....	.....	.....	.....
Crawford, McGregor & Canby....	Shoe lasts, etc.....	50	4	10	Minors	Complied
Adam Zengel.....	Boxes.....	10	10	6	" machinery	Complied
Sachs, Prudens & Co.....	Ginger ale, etc.....	21	.....	1	" elevator	Complied
Bryce Furnace Co.....	Furnaces.....	12	.....	.....	Emery-wheels .....	.....
C. N. Smith.....	Flour mill machinery.....	5	.....	.....	.....	.....
Lewis & Co.....	Saws.....	4	.....	.....	.....	.....
H. R. Parrott & Co.....	Furniture.....	25	.....	1	Minors; elevator.....	Complied
Brownell & Co.....	Engines, etc.....	67	.....	2	"	Complied
W. P. Lewis.....	Paper.....	17	.....	9	" machinery	Complied
John Klee & Son.....	Carbonated waters.....	13	.....	4	"	Complied
J. H. Wild.....	Woolen yarns.....	8	3	1	" machinery	Complied
Pritz & Co.....	Castings.....	8	.....	.....	.....	.....
R. M. Connoble & Co.....	Overalls.. ..	5	40	5	Minors; ventilation.....	Complied
G. J. Roberts & Co.....	Machinery.	19	.....	.....	.....	.....
Union Collar and Net Co.....	Horse collars, etc.....	15	15	20	Minors; building.....	Complied
Murray Hanna.....	Carriages, etc.....	15	.....	.....	.....	.....
J. P. Davis.....	Lard oil.....	20	.....	6	Minors; elevator	Complied
E. H. Brownell & Co.....	Boilers, etc.....	60	.....	3	" machinery; building	Complied
Frank & Burns.....	Carbonated waters.....	7	.....	1	"	Complied
Terry & Shreyer.....	Tobacco.....	4	12	2	"	Complied
Thomas Nixon & Co.....	Paper bags.....	14	9	2	"	Complied
G. W. Heathman & Co.....	Crackers.....	16	3	1	"	Complied
Dayton Collar and Leather Co....	Leather	8	.....	.....	Machinery; elevator.....	.....
Herald Publishing Co.....	Newspaper	23	.....	3	Minors	Complied
A. Bretch.....	Galvanized iron, etc.....	8	.....	.....	.....	.....

DAYTON—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
T. A. Phillips & Sons.....	Cotton goods.....	46	20	36	Minors; building.....	Complied ...	.....
Freeman & Beebe.....	Laundrying.....	3	19	.....	Former orders.....	.....	Complied.
Hewitt Bros.....	Soaps.....	5	.....	1	Minors.....	Complied ...	.....
Jos. Kratochwill.....	Flour, etc.....	15	.....	.....	Machinery.....	.....	.....
Hanna Bros.....	Cigars.....	21	68	12	Minors; building.....	Complied ...	.....
L. & M. Woodhull.....	Carriages.....	75	.....	2	Minors; emery-wheels.....	Complied ...	.....
Moses Glass.....	Cigars.....	13	12	.....	Fire-escape.....	.....	.....
C. F. Snyder.....	Tables.....	17	.....	11	Minors; elevator.....	Complied ...	.....
Dayton Screw Co.....	Screws.....	58	80	6	" former orders.....	Complied ...	Complied.
The Smith & Vaile Co.....	Steam pumps, etc.....	135	2	.....	Former orders.....	.....	Complied.
Pearce & Coleman.....	Builders' wood-work.....	80	.....	10	Minors; mach'y; elevator...	Complied ...	.....
Bright & Fenner.....	Confectionery.....	6	4	.....	Elevator.....	.....	.....
Jos. Weinreich.....	Cigars.....	5	7	1	Minors; building.....	Complied ...	.....
Adam Capel.....	Umbrellas, etc.....	3	5	2	" fire-escape.....	Complied ...	.....
R. C. Brewer.....	Cigars.....	7	.....	2	"	Complied ...	.....
W. P. Callahan & Co.....	Machinery.....	60	.....	.....	Machinery.....	.....	.....
D. E. McSherry & Co.....	Agricultural implements.....	85	.....	.....	Emery-wheels.....	.....	.....
The German Newspaper Co.....	German paper.....	4	7	2	Minors; fire-escape.....	Complied ...	.....
Dayton Democrat.....	Newspaper.....	32	.....	3	Minors.....	Complied ...	.....
Johnson & Watson.....	Blank-books.....	9	7	.....	Fire-escape.....	.....	.....
Mull & Underwood.....	Candies, etc.....	4	3	2	Minors; fire-escape.....	Complied ...	.....
Farmers' Friend Manufactur'g Co	Agricultural implements.....	200	.....	6	Elevator; minors; building; emery-wheels.....	Complied ...	.....
John Stengel & Co.....	Furniture.....	45	.....	10	Minors; fire-escape; mach'y	Complied ...	.....
Adam Pritz & Son.....	Agricultural implements.....	Idle.	.....	.....	Elevator; building.....	.....	.....
Zwick, Greenwald & Co.....	Carriage-wheels.....	65	.....	4	Minors; mach'y; emery-wh'ls	Complied ...	.....
Dayton Spice Mills Co.....	Coffee and spices.....	10	20	.....	Fire-escape; ventilat'n; ma- chinery; elevator.....	.....	.....

El Canby.....	Baking powder, etc.....	18	15	1	Minors; fire-escape; elevat'r	Complied	.....
Troup, Kinnard & Co.....	Blank-books and printing...	23	16	3	" fire-escape.....	Complied	.....
Dayton Leather and Collar Co....	Horse collars.....	28	2	2	" ".....	Complied	.....
Dayton Plow Co.....	Flows.....	30	.....	.....	Fire-escape; emery-wheels; elevator; machinery.....	.....	.....
Lewis Kneiser, Jr.....	Straw board.....	15	.....	6	Minors; machinery.....	Complied	.....
The Dayton Manufacturing Co....	Brass car trimming.....	80	3	15	" ".....	Complied	.....
The C. L. Hawes Co.....	Straw board.....	110	15	10	" ".....	Complied	.....
Gem City Stove Co.....	Stoves, etc.....	22	.....	1	" ".....	Complied	.....
John B. Hoglen.....	Lumber.....	25	.....	.....	Former orders.....	Complied	.....
Pinneo & Daniels.....	Carriage wheels ..	90	.....	6	Minors; machinery; elevator	Complied	.....
Brownell & Co.....	Boilers.....	82	.....	7	" " building	Complied	.....
R. Wolf.....	Paper boxes.....	.....	5	1	" former orders.....	Complied	.....
Cotterill, Fenner & Co.....	Tobacco.....	5	60	18	" elevator.....	Complied	.....
G. Stomp & Co.....	Chairs.....	105	3	20	" machinery.....	Complied	.....
The Gem Shirt Co.....	Shirts.....	4	80	6	" fire-escape.....	Complied	.....
Ohmer's Sons.....	Furniture ..	30	1	.....	Fire-escape; machinery.....	.....	.....
Barney Smith Manufacturing Co..	Railroad cars.....	1,300	8	50	Minors; machinery; emery-wheels; elevator.....	Complied	.....
F. J. Diem & Co.....	Wrapping paper..	20	2	1	Minors; machinery; build'g Machinery.....	Complied	.....
The Parrott Manufacturing Co....	Plows.....	25	.....	.....	Minors; mach'y; elevator...	Complied	.....
The Mead Paper Co.....	Printing paper.....	85	40	2	Machinery.....	.....	.....
Mary Bruns.....	Flour.....	5	.....	.....	.....	.....	.....
The Aughie Plow Co.....	Plows.....	12	.....	.....	.....	.....	.....
Thresher & Co.....	Varnishes.....	5	.....	.....	.....	.....	.....
The Simon Gebhart Son's Flour Co	Flour.....	21	.....	.....	Machinery; fire-escape.....	.....	.....
Reynolds & Reynolds.....	Blank-books.....	42	36	15	Minors; elevator.....	Complied	.....
Miller Bros.....	Cigars.....	21	52	35	" ".....	Complied	.....
Alfred Pruden.....	Paper stock, etc.....	4	5	.....	Elevator.....	.....	.....
National Cash Register Co.....	Cash registers.....	54	2	5	Minors; elevator; fire-escape	Complied	.....
The Holden Book-Cover Co.....	Book covers.....	6	4	1	" ".....	Complied	.....
H. E. Mead Paper Co.....	Paper bags and printing.....	10	.....	4	" ".....	Complied	.....
Dayton Loop and Crupper Co....	Loops and cruppers.....	14	2	3	" ".....	Complied	.....
Am. Bolt and Screw Case Co.....	Bolt and screw cases.....	8	.....	.....	.....	.....	.....
Columbia Bridge Co.....	Bridges.....	35	.....	.....	Machinery.....	.....	.....
Dayton Syrup Refining Co.....	Syrups, etc.....	31	.....	.....	" ".....	.....	.....
G. Weippert.....	Cooperage.....	6	.....	.....	Building.....	.....	.....
A. A. Simonds.....	Machine knives.....	25	.....	.....	Machinery.....	.....	.....
The Stillwell & Bierce Co.....	Flour mill machinery.....	200	2	3	Minors; machinery.....	Complied	.....
Stout, Mills & Temple.....	Flour and paper mill mach'y	130	.....	3	" ".....	Complied	.....

DAYTON—Continued.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
B. N. Beaver	Builders' wood-work	12	.....	.....	Machinery .....	.....	.....
Famous Laundry Co	Laundrying	6	12	.....	.....	.....	.....
Boyer & McMaster	Stoves	30	.....	.....	Emery-wheels .....	.....	.....
Broadup & Co	School furniture	16	.....	2	Minors; machinery	Complied ..	.....
A. L. Bauman	Crackers, etc	3	4	1	“ elevator; mach'y ..	Complied ..	.....
Walker & Walker	Printing	12	4	3	“ fire-escape	Complied ..	.....
Chas. Winchet	Sheet iron work	27	.....	.....	Former orders .....	.....	Complied.
Wise, Schieble & Co	Cotton batting	17	.....	12	Minors; machinery	Complied ..	.....
U. B. Publishing Co	Printing and publishing	56	24	10	“ mach'y; elevator ..	Complied ..	.....
Durst & Bros	Flour, etc., and elevator works	11	.....	1	“	Complied ..	.....
J. W. Johnston	Printing	9	3	4	“ building	Complied ..	.....
Phil. E. Gilbert	Builders' wood-work	45	.....	.....	Machinery .....	.....	.....
E. B. Lyons	Trunk wood material	33	.....	8	Minors; machinery	Complied ..	.....
Groneweg Bros	Printing	16	5	2	“	Complied ..	.....
Christian Publishing Co	Printing and publishing	12	5	3	“ elevator	Complied ..	.....
C. A. Kingsbury, Jr.	Paper boxes	1	8	2	“ fire-escape	Complied ..	.....
MIAMISBURG.							
D. Groby	Builders' wood-work	8	.....	.....	.....	.....	.....
The Miamisburg Mower Co	Mowers, etc	Idle.	.....	.....	Machinery .....	.....	.....
Miami Valley Paper Co	Paper	40	14	.....	Building .....	.....	.....
The Ohio Paper Co	Straw pulp	10	.....	.....	.....	.....	.....
The Ohio Paper Co	Printing paper	45	19	.....	.....	.....	.....
Bookwalter Bros. & Co	Carriage wheels, etc	50	.....	4	Minors; machinery	Complied ..	.....
U. Engleman	Flour, etc	4	.....	.....	.....	.....	.....
The Kaufman Buggy Co	Carriages, etc	50	.....	6	Minors	Complied ..	.....
Miamisburg Binders' Twine and Cordage Co	Cordage	133	66	20	“ machinery; elevator ..	Complied ..	.....

Joseph Weaver.....	5	.....	Machinery .....	.....
Hoover & Gamble	200	.....	Minors; mach'y; elevator; fire-escape.....	.....
Builders' wood-work.....				Complied ...
Reapers, etc				Complied ...

MIAMI COUNTY.

PIQUA.

L. C. & W. L. Cron & Co	150	.....	Minors; fire-escape	Complied ...
Piqua Straw Board and Paper Co	80	.....	" machinery	Complied ...
Cron, Kills & Co	120	1	"	Complied ...
The F. Gray Co	26	41	"	Complied ...
The Piqua Hosiery Co	2	65	"	Complied ...
Snyder & Son	130	.....	Machinery .....	.....
Piqua Oat Meal Co	10	.....	" .....	.....
Piqua Manufacturing Co	17	15	Minors	Complied ...
Fritsch Bros	6	.....	Machinery .....	.....
Piqua Straw Board and Paper Co	27	.....	" ventilation .....	.....
Wood, Farrington & Co	10	.....	.....	.....
Farrington, Slausson & Nelson	4	.....	Machinery; building .....	.....
Bowdle Bros	14	.....	" .....	.....
Crozier & Willbee	10	.....	.....	.....
L. W. Fillebrown & Son	5	.....	.....	.....
Piqua Handle Co	40	.....	Minors; machinery	Complied ...
C. A. & C. L. Wood	20	.....	.....	.....

TROY.

Troy Burlap Co	26	26	Minors; machinery	Complied ...
Scott, Leidegh & Todd	85	4	" fire-escape	Complied ...
Troy Spring Wagon and Wheel Co	90	3	Machinery; minors; eleva- tor; fire-escape	Complied ...
The Beedle and Kelley Co	73	.....	Minors; machinery	Complied ...
John Kelley & Sons	6	.....	Elevator .....	.....

TIPPECANOE.

J. L. Norris	5	.....	.....	.....
Trupp, Weakley & Co	25	.....	Machinery .....	.....
Ford & Co	50	1	Minors; ventilation	Complied ...
Dietrich Milling Co	5	.....	.....	.....
The Tipp Paper Co	30	4	Minors; machinery	Complied ...

PREBLE COUNTY.

EATON.

Names of firms.	Goods manufactured.	Employees.			Changes ordered as to—	Compliances as to—	
		Males.	Females.	Minors.		Minors.	Other orders.
F. P. Filbert.....	Cigars	22	6	7	Minors	Complied ..	.....
Coovert & Cooper	"	12	14	3	"	Complied ..	.....
G. A. & J. F. Lugar	Builders' wood-work	11	.....	.....	.....	.....	.....
Frank Rinehart	"	4	.....	.....	.....	.....	.....
H. Sanders	Flour, etc	3	.....	.....	Machinery .....	.....	.....
W. F. Jones	Cigars.....	6	6	1	Minors	Complied ..	.....
Straw Bros	Cigar boxes.....	3	2	.....	.....	.....	.....

SHELBY COUNTY.

SIDNEY.

J. Dann	3	.....	.....	.....	.....	.....	.....
John Loughlin	135	.....	.....	12	Minors; machinery; eleva'r ..	Complied ..	.....
Slusser & McLean Scraper Co.....	17	.....	.....	1	"	Complied ..	.....
The Sidney Manufacturing Co.....	35	.....	.....	1	"	Complied ..	.....
Phillip Smith.....	30	.....	.....	1	" machinery	Complied ..	.....
The Wyman Spoke Co.....	20	.....	.....	.....	Ventilation .....	.....	.....
J. M. Blue & Nutt.....	6	.....	.....	.....	Machinery .....	.....	.....
R. Given & Son	10	.....	.....	.....	Fire-escape .....	.....	.....
B. W. Maxwell & Son	4	.....	.....	.....	Machinery .....	.....	.....
Anderson, Frazier & Co	77	.....	.....	.....	Minors; ventilation	Complied ..	.....
James O. Amos	8	1	.....	3	"	Complied ..	.....
The Valley City Milling Co.....	5	.....	.....	1	" machinery	Complied ..	.....
J. S. Crozier & Son.....	6	.....	.....	1	"	Complied ..	.....
J. M. Seitter & W. H. C. Monroe..	30	.....	.....	2	" machinery	Complied ..	.....
Goode & Kilborn	22	.....	.....	1	"	Complied ..	.....

The Sidney Steel Scraper Co.....	Road scrapers	21	.....	1	Minors; machinery	Complied
J. F. Black	Builders' wood-work.....	10	.....	.....	Machinery .....	.....
McKinnie & Richardson	Brooms	6	2	2	Minors	Complied

VAN WERT COUNTY.

DELPHOS.

The Ohio Wheel Co	Wheel material.....	60	.....	2	Minors; elevator	Complied
Hartwell Bros	Handles, neck yokes, etc.....	14	.....	.....	Ventilation .....	.....
Delphos Union Stave Co	Staves and heading	20	.....	3	Minors	Complied
Pittsburgh Hoop and Stave Co.....	Hoops	35	.....	15	"	Complied
L. F. Werner	Woolen yarns, flannels, etc..	3	4	1	" former orders	Complied
Miller & Morton	Flour, etc	7	.....	.....	.....	.....

VAN WERT.

L. F. Ross	Tile	5	.....	.....	.....	.....
Rupright Bros	Tile	5	.....	.....	.....	.....
Geo. H. Marsh	Staves and heading	68	.....	10	Minors	Complied
H. Butler & Co	"	1	1	6	"	Complied
J. A. Gleason & Bro.....	Wheel material.....	8	.....	.....	Machinery .....	.....
A. & F. Gleason	Builders' material	14	.....	.....	" .....	.....
People's Milling Co	Flour, etc.....	5	.....	.....	" .....	.....
Union Milling Co	"	5	.....	.....	" .....	.....
Straek & Angell	Lumber	10	.....	1	" minors	Complied
D. Spangler.....	Builders' wood-work	5	.....	.....	" .....	.....
Oil Well Supply Co.....	Oil well supplies, etc	25	.....	1	" minors	Complied
W. A. Clark	Flour	5	.....	.....	" .....	.....

WARREN COUNTY.

FRANKLIN.

The Harding Paper Co.....	Writing papers	30	70	.....	Elevator; machinery .....	.....
The Friend & Forgry Paper Co....	Manilla paper	50	1	4	Minors; machinery; venti- lation	Complied
The Franklin Paper Co.....	Printing paper.....	15	21	.....	Machinery; ventilation .....	.....
The Perrine Paper Co.....	Manilla papers, etc.....	18	9	.....	" .....	.....
Eagle Paper Co.....	Wood pulp.....	15	.....	.....	Fire-escape; elevator .....	.....
J. S. Van Horn	Builders' wood-work.....	9	.....	.....	.....	.....
The Harding Paper Co.....	Cleaning rags, etc.....	14	70	.....	Machinery; elevator.....	.....

APPENDIX.

FIRST CONVENTION

OF

FACTORY INSPECTORS,

HELD AT

PHILADELPHIA, JUNE 8-9, 1887.

FACTORY INSPECTORS.

RUFUS R. WADE, <i>Chief</i>	Boston, Mass.
L. T. FELL, <i>Chief</i>	Orange, N. J.
HENRY DORN, <i>Chief</i>	Columbus, Ohio.
JAMES CONNOLLY, <i>Chief</i>	Albany, N. Y.
HENRY SIEBERS.....	Milwaukee, Wis.
W. P. KELLEY.....	Killingly, Conn.
L. R. CAMPBELL, <i>Deputy Commissioner of Labor</i>	Rockland, Maine

PREFATORY.

The importance of bringing together the Factory Inspectors of the different States has long been recognized. The benefits that would likely accrue from a conference of those whose duties involve such vast consequences to community were manifest. The laws on the subject of inspection in the various States are so different as scarcely to be recognizable as being upon the same general subject. To produce something like uniformity, both in the laws and in the practice of the inspectors, was deemed desirable, and this could only be effected by an interchange of views and a comparison of the statutes under which each inspector acted. To accomplish so laudable a purpose, Mr. Henry Dorn, Chief Inspector of Workshops and Factories of Ohio, opened a correspondence during the year 1886 with the Inspectors of other States, with the view of bringing about a meeting at as early a date as practicable. This, of course, took considerable time. Each Inspector entertained views peculiar to himself on the subject, and these conflicting ideas had to be harmonized.

But Mr. Dorn persevered in his efforts, and finally succeeded. The Philadelphia Convention, whose proceedings are recorded in the following pages, was held, and every man who attended that meeting is fully satisfied with the results. The wisdom and foresight that suggested the movement were manifest to the members. A permanent organization was effected and arrangements made for annual meetings hereafter. These annual meetings will, no doubt, grow in importance and interest, and, it is confidently believed, will result in incalculable benefit to all concerned, to the employer as well as the employe, and to the public at large. That such may be the case, is the ardent hope of the Factory Inspectors who assembled at Philadelphia on the 8th and 9th of June, 1887; and I believe that I but voice the sentiment of all my associates in that Convention, when I say that Hon. Henry Dorn, Chief Inspector of Workshops and Factories of Ohio, is deserving of all praise for his untiring efforts in bringing us together, and for the wisdom, born of experience, he exhibited in our deliberations, showing, as he so clearly did, a complete mastery of the entire subject.

L. T. FELL,
Chief Inspector State of New Jersey.

FIRST CONVENTION.

PHILADELPHIA, WEDNESDAY, *June 8*, 1887.

The First National Convention of State Factory Inspectors convened in the Chamber of the Common Council of the city of Philadelphia at 11 o'clock A. M., and was called to order by Mr. Henry Dorn, Chief Inspector of Ohio, who introduced Hon. Charles Lawrence, President of the Common Council, who welcomed the members to the city in an eloquent address.

Mr. Dorn then delivered the following address :

Gentlemen of the Convention :

We have assembled for the purpose, as I understand it, of taking counsel, one of another, as to the best means of accomplishing the object for which the office of factory inspector was created.

We, as factory inspectors, are unlike, in the duties imposed upon us and the results to be attained, all other officers of the States we represent, and for this, among other reasons, I do not think it advisable to connect the office of factory inspector with any other, or to subordinate it in any way to any bureau or department of the State government.

As the duties of the inspector are distinct from those of any other officer, so are the abilities necessary for the proper and successful discharge of those duties of a different order from those required of the heads of other departments.

There seems to be a disposition to unite the offices of factory inspector and commissioner of labor statistics. The latter is an office of great importance, but its proper sphere is the collection of facts, and the systematic arrangement of data for the information and guidance of the legislator, while the purpose of the former is to effect immediate results. While an ability to collate and analyze ascertained facts concerning the social and industrial condition of the people is an absolute requisite in the statistician, the factory inspector should be a master of mechanism, and also be possessed of a fair knowledge of hygiene, at least as far as relates to ventilation, and the effect of different gases, dust, etc., upon health. The two positions are so dissimilar in every respect, it seems strange that it should ever have occurred to any one to unite them under one head.

A man may be a master of statistics, and yet not know the difference between a pulley and a fly-wheel; and, on the other hand, while a man may be a thorough adept in mechanism, he may be as ignorant of the teachings of statistics as the red man of the forest.

The office of factory inspector is of comparatively recent origin. The people at large possess but a limited knowledge of its designs, and have but an imperfect idea of what it may accomplish for their good, and before we can succeed fully in our undertaking, the people must be made acquainted with the importance of the subject, the necessity of thorough inspection, both from the standpoint of the philanthropist and from that of the patriotic statesman.

Many well-meaning men look upon us as being in some way identified with those who are considered labor agitators, while the fact is that the certain result of a full and cheerful compliance with the laws under which we act would be the lessening of agitation by making the workmen more contented in consequence of improved sanitary conditions, and the reduction to the minimum of liability to accident. Poorly ventilated and otherwise disagreeable workshops or factories are not calculated to produce that peace of mind which reconciles the workman to his hard lot. Neither are mangled or broken limbs convincing arguments that the pathway of the laborer is strewn with roses.

Make our workshops and factories comfortable and healthy, and secure those employed therein against the accidents that are now of daily occurrence, and one great source of discontent and consequent strikes will be removed. While millions of money are spent in the interest of domestic live stock, it does not seem extravagant to ask for a few thousand in the interest of humanity. It is folly to expect either men or women to be contented, and to cheerfully perform their laborious tasks, while breathing a poisonous atmosphere, and in momentary danger of being either killed or crippled for life by insecure machinery, or of having their bodies charred by the flames of a burning workshop or factory, from which the means of egress are insufficient.

When mishap overtakes them, what have they to rely on for support? They and their little ones, in such a contingency, which is of frequent occurrence, have the alms-house only to rely on, and that is not a very agreeable fact to contemplate by those who have been taught to consider themselves the peers of the highest.

The American mind naturally revolts at the thought of having to be supported by public charity. The factory operative knows he has contributed his share to the wealth of the country, and to know that the heartless, criminal negligence of his employer may at any time consign him and those dependent on him for support to the tender mercies of the public alms-house, is not likely to convince him that he is treated as he should be, or that combinations and strikes are as odious as some paint them. There is a sense of right, of fairness, of justice between man and man, in the mind of every human being, however poor or illiterate, and he naturally and rightfully rebels against every attempt to place him on a level with the beasts of the field. He has been taught that he was made in the image of Jehovah, and believing this, he is fully persuaded that he should be treated with humane care and consideration, without regard to the number of dollars in his pockets, or to the quality of the cloth he wears.

And if we look at this subject from the standpoint of the proprietor only, if we take a purely dollar-and-cent view of it, one of profit to the manufacturer, the necessity of thorough inspection is just as great.

It is a mistaken idea entertained by some that a few dollars expended for the purpose of securing the comfort and protecting the lives of employes will lessen the profit side of the account to that extent. The greater the interest the employe takes in his work, the greater the profit of the employer; and no fact is better established than that the workman cares for his employer just in proportion as the employer cares for his workman. Good and humane treatment on the part of capital is sure to receive a proper and profitable reward from labor. It is a paying investment.

Who has not seen, almost daily, instances of sullenness and indifference on the part of workmen, resulting in loss to the employer, caused by the neglect of the latter to properly provide for the comfort of his work people? This feeling is perfectly natural, and is far more costly to the manufacturer than would be the placing of his establishment in a condition that would secure the health and safety of those on whose labor he relies for his profits, and who rely on him for support.

The duties that the law under which we act have mapped out for us are far-reaching in their effects. On us, or at least on some if not all of us, devolves the important duty of ascertaining whether children under a certain age are employed

in workshops and factories. A strict compliance with this wise and wholesome requirement demands the exercise of a sound judgment, and at the same time unwavering firmness on our part. This provision of the law, while to some it may seem arbitrary and unjust, is based on sound statesmanship, and strikes at the very foundation of all our industrial troubles. It meets with the approval of the purely humanitarian, and preserves, to a great extent, the State from the effects consequent upon the enforced idleness of a considerable portion of its male adults. It is certainly better that the father should labor, and the child attend school, than that the child should be immured in a workshop or factory, at the risk of health and the certain deprivation of that education which is necessary to fit it for the intelligent exercise of the privileges of citizenship, while the father is doomed to a life of idleness, with all the evils incident thereto. This law is in the direct interest of intelligence, and, consequently, of free institutions, and, at the same time, contributes largely to the pacification of the wage-workers of the country, by increasing the demand for their labor, and, as an inevitable consequence, increasing their compensation therefor.

These are some of the results that may surely be expected to follow the enforcement of the child-labor laws of the several States. In what way could we more certainly contribute to the welfare of the State and to the happiness of our fellow-beings than by seeing to it that this wise and humane law is strictly enforced, as far as we have the power to enforce it?

We have other duties to perform, we are under other obligations to the people in whose behalf we labor, but none transcend, in the magnitude of its beneficial effects, the sacred obligation we are under to humanity, to the present and future generations, to see to the proper execution of the child-labor law. Proper care taken of the little ones renders comparatively easy the task of providing for the older and more mature. "An ounce of prevention is worth a pound of cure."

Then, again, our business brings us in contact with all kinds of men, requires of us the careful examination of all kinds of structures, and of all kinds of machinery and mechanical appliances. We have to judge of the necessity and adequacy of fire-escapes, or other means of men, women and children escaping from a burning workshop or factory. It is our duty to put a stop to this oft-recurring human sacrifice to greed or ignorance.

What could be more appalling than the graphic account of the holocausts that so frequently meet our eyes on opening a daily paper? To discharge our duties in this regard to the satisfaction of all parties concerned requires of the workshop and factory inspector a tact, a judgment, a patience and perseverance that are but little appreciated by the great majority of the people. We do not do enough for some, and too much for others. We are between two fires. We must trust, in the main, to our common sense, and endeavor to do to others as we would have others do to us. Our object, in these examinations, is to protect all, and to injure none. If we sometimes fail in reaching and correcting some existing evil, it is because we are fallible mortals, not because of design or intended neglect. We labor under many difficulties. We have to travel, at least some of us do, in the course of a year, over territory embracing from ten to twenty-five thousand square miles. It would indeed be strange if we should not miss, in such a wide field, an establishment or two needing our attention.

We have undoubtedly accomplished much in the short time we have had an official existence, and this, too, with inadequate means, and despite the opposition of heartless greed on the one hand and ignorant prejudice on the other. But much remains to be done. Opposition to inspection is fast disappearing. We are welcomed or not, just in proportion to the manufacturer's knowledge of our purposes, and the results expected to be effected by our examinations. It is fast coming to be understood that discontented workmen are not the most profitable, and that unsafe machinery and a poisonous atmosphere are neither necessary nor economical.

It would, perhaps, be well if we could have more uniformity, both as to the laws and the manner of carrying them out in the different States; but in some respects

this cannot be had. The conditions existing in different localities are so unlike that the same law could not possibly operate satisfactory in all. Certain industries that form so prominent a feature of the manufactures of the eastern States are almost unknown west of the Alleghenies, and many of the workshops and factories of Ohio, Indiana, Illinois, Michigan, and other western States, have no counterpart on the Atlantic slope. We must, therefore, accommodate ourselves to the conditions with which we find ourselves surrounded. We are all seeking the same end, though it may be necessary to employ different means.

We are here for the purpose of comparing notes and of each one availing himself of the experience and suggestions of others. We have much to learn, and no one should hesitate to avail himself of all knowledge that presents itself, come whence it may. We should willingly learn all we can relating to our special duties, and as willingly apply all we know to the accomplishment of the good work in which we are engaged. We are endeavoring to restore the child to the school-room, and to prevent the useless and criminal waste of health and life that has heretofore gone on unheeded and unchecked. We are endeavoring to protect the working people of the country in life, health and limb, and to rear their children in such manner that they may become intelligent and healthy men and women; the possessors of sound minds, of good morals, and of unbroken constitutions. No man was ever engaged in a better cause, and no cause should receive a more cordial support from the State and the public at large.

I hope we shall not return to our homes without having been benefited by this meeting. I hope that we shall go hence better fitted to labor in the interest of humanity, and with a more comprehensive understanding of the wants of the workers of the country, and how to supply those wants. I also hope that before we separate we shall have effected a permanent organization. We should meet annually, that each one may receive new encouragement and strength from the experience of the previous year.

The press can be of immense benefit to us and to the cause we represent by disseminating facts bearing upon the subject of shop inspection. As to what may occur or be done here, I have no doubt that the reporters will place us in a proper light before their readers. There is no aid so desirable, none so powerful, as the support of a free, fearless, and untrammelled press. Its mission is to give its readers unvarnished facts, and such comments thereon as may be deemed necessary to a proper understanding of the subject-matter.

On motion of Mr. Rufus R. Wade, Chief Inspector of Massachusetts, Mr. Dorn was unanimously elected temporary President of the Convention.

Mr. J. J. Jennings, of Connecticut, was chosen temporary Secretary.

The following gentlemen appeared and were recognized as delegates:

Massachusetts—Rufus R. Wade, Chief, Boston; John T. White, Boston; Joseph M. Dyson, Worcester; H. A. Dexter, Fall River; J. H. Chadwick, North Adams; S. C. Hunt, Salem; W. S. Buxton, Springfield.

New Jersey—L. T. Fell, Chief, Orange; G. P. Hall, Bridgeton; John C. Craigie, Newark; John D'Arcy, Trenton.

Ohio—Henry Dorn, Chief, Columbus; H. C. Traphagen, Cincinnati; William Z. McDonald, Akron; John H. Ellis, Columbus.

Connecticut—J. J. Jennings, Bristol; representing the State Board of Education.

Mr. Hall, of New Jersey, moved the appointment of a committee of five on permanent organization, which was agreed to; and the Chair appointed as said committee Rufus R. Wade and Joseph M. Dyson, of Massachusetts; L. T. Fell, of New Jersey; J. J. Jennings, of Connecticut, and John H. Ellis, of Ohio.

Mr. Hall, of New Jersey, acted as Secretary of the Convention in the absence of Mr. Jennings, serving on the foregoing committee.

On motion of Mr. Hunt, of Massachusetts, it was agreed that when the Convention adjourn it be till three o'clock P. M.

The invitation of Mr. Lawrence, President of the Common Council, to visit Girard College, and other places of interest, on Thursday afternoon, was, on motion of Mr. Hunt, accepted.

The Chair stated that he had just received a telegram from Mr. John Franey, Assistant Inspector of New York, stating that he had missed the train, but would be present the following day.

On motion of Mr. Traphagen, of Ohio, the President was requested to telegraph at once, requesting Mr. Franey to attend the Convention.

The Committee on Permanent Organization reported, recommending the following officers:

President—Rufus R. Wade, of Massachusetts.

Vice President—L. T. Fell, of New Jersey.

Secretary and Treasurer—Henry Dorn, of Ohio.

The report was unanimously agreed to.

Mr. Wade, on taking the chair, delivered the following address:

Gentlemen of the Convention:

That I should be called upon to speak of the industrial and inspection laws of Massachusetts, I have no doubt, was expected by every delegate present, and I have therefore noted down some of the most important legislation relating to subjects that would naturally come before the convention for discussion; and for another reason, that the established policy of the good old Commonwealth might be better known and be followed by similar legislation in other States.

Interesting and important questions which concern both employer and employe will undoubtedly engage our attention, and I trust the results of our conference here will be of benefit to us all in the administration of laws that are or may be enacted for the improvement and advancement of the laboring population.

The Commonwealth of Massachusetts knows no class among her citizens. All alike share the benefits of her institutions. Capital, as such, is entitled to no special favor that labor may not claim. The avenues to wealth, learning and distinction are public highways, and the pathways are kept unobstructed.

Certainly some, if not all, of us bring to the discussion of these questions an experience covering many years of active work, patient thought, and vast opportunity. The chief fear I have in addressing gentlemen who are experts in the branches of official duty represented here, is well illustrated by the story of the little boy, who, coming home from church one Sunday, asked his mother, "Does God take the

newspapers?" "No, my child; why do you ask?" "I thought he didn't, because it took the minister when he prayed so long to tell Him about things."

Now, I assume, gentlemen, that you take the newspapers, and know something of the matters that may come before us for discussion.

It must be conceded, however, that while our general work is similar, and the results aimed at are in their leading features identical, our methods of administration may widely differ.

Whether we shall learn much from each other depends upon several things. It depends upon our willingness to learn; it depends upon seeing things from another standpoint than our own.

In the remarks I shall make it is my purpose to give as much information as possible concerning the industrial legislation of the Commonwealth of Massachusetts. It ought not to shock the modesty of a Massachusetts man to claim that his State was the pioneer among our sisterhood of States in the enactment of wise and useful laws for the protection and elevation of her laboring population.

The limiting of the hours of labor for women and minors in factories and similar establishments was under discussion many years before the legislature could be prevailed upon to take action upon the subject. In many country school-houses and lyceums, in many debating clubs, on the political rostrum, beside many a forge and furrow, loom and anvil, gathered thoughtful, earnest men, who exchanged experiences, told the story of their hardships, questioned the established order of things, and participated in an agitation which did not subside until it had left its broad impress upon our statutes.

These questions related to the hours of labor, the physical condition of the operatives, protection from unguarded machinery, the employment of women and minors, the schooling of children employed in factories and workshops, the preservation of health, reports of accidents, safety appliances for elevators, better provision for escape from hotels and other buildings in case of fire, sanitary improvements of workshops, uniform meal hours for children, young persons and women employed in factories, and to secure the proper ventilation of such buildings.

It was admitted by all fair-minded men conversant with such matters that radical changes were necessary in order to satisfy the reasonable demands of the great mass of our people, who were obliged to earn their bread by the sweat of their brow, but who demanded that the condition of such a life should be made as little burdensome as possible.

The history of what is called our ten-hour law was a record of constant, feverish struggle, maintained year after year, passed in one branch of the legislature and defeated in the other; and it was not until several annual sessions had elapsed that the bill so earnestly and bitterly fought over became a law. It is well that such laws are enacted. It is well that the producers of wealth have been recognized.

It is a natural law that water shall find its level, and up to certain limits you can restrain and confine it. Like all natural forces, it will serve you if you will wisely conform to the law of the case, or destroy you if you try to override that law.

I do not understand that you can determine with mathematical exactness to what extent a certain reduction of hours will affect the sum of productions in any given year. It is a large question to deal with, and something of its magnitude may be understood when you consider that the machinery employed in Massachusetts alone is equal to the labor of many millions of men.

But in our State the policy has been established of conserving manhood. The eye, the hand, the brain of the worker are finer machines than any produced by his labor and skill. So we think it is wiser to improve our people than to increase the productive capacity of our machinery.

This was the controlling motive in the minds of those who advocated a reduction of the hours of labor in our factories and workshops.

Whether from motives of humanity, or from economic considerations, the legis-

lature of Massachusetts, representing the wishes of the people generally, from 1874, when the bill to regulate the hours of labor became a law, down to the session of the current year, has thrown the safeguards of law around her laboring people, and sought to protect them from evils and dangers to which they were exposed by the cupidity or thoughtlessness of others.

Our law in Massachusetts in relation to the employment of labor provides that persons employed in factories shall not be discharged without notice, if a notice of intention to leave such employment is required of them; that whoever, by intimidation or force, prevents, or seeks to prevent, a person from entering into or continuing in the employment of a person or corporation shall be punished by a fine of not more than one hundred dollars; that the employers of labor shall not contract for exemption from liability for injuries which result from employers' own negligence, or from the negligence of other persons in such employment.

The minors under eighteen and women shall not be employed in manufacturing or mechanical establishments more than ten hours in any one day, with certain exceptions as to lost time on some previous day of the same week, as to the stopping of machinery or an apportionment of time to make one short day of the week. We have also a law relating to the employment of minors in mercantile establishments which prohibits their employment more than ten hours in any one day.

The laws relating to the employment of children in manufacturing and other establishments provide that no child under ten years of age shall be employed in any manufacturing, mechanical or mercantile establishment in the State, and no child under twelve years of age shall be employed at any time during the days in which the public schools are in session in the city or town in which he resides. No child under fourteen years of age shall be employed except during the vacation of the public schools, unless during the year preceding such employment he has for at least twenty weeks attended some public or private school, under teachers approved by the school committee of the place where such school is kept; and a certificate must be presented, made by or under the direction of the school committee, of his compliance with the foregoing requirements.

Provisions are made for the inspection of establishments employing such minors, and of the certificates required by law. No child under fourteen years of age is permitted to clean any part of machinery while in motion by the aid of steam, water, or any other mechanical power.

We have a law, likewise, to secure uniform and proper meal hours for children, young persons and women employed in factories and workshops, with certain suitable exceptions. Among the most recent laws is that to secure the proper ventilation of factories and workshops, and another to secure proper sanitary provisions in such establishments.

The law requiring accidents to be reported will operate, in many cases, to prevent such occurrences. We have an act for the promotion of the health of females employed in manufacturing, mechanical and mercantile establishments, which requires that suitable seats shall be provided for the use of females employed when not necessarily engaged in the active duties for which they are employed. Another wise law is one which prohibits the locking of doors of buildings wherein operatives are employed during the hours of labor.

A very important department of our work remains to be spoken of. I mean that of inspection. We have officers of large experience. The city of Boston has its own inspection laws and officials; but the rest of the Commonwealth is covered by the inspectors of the District Police.

In the act relating to the inspection of factories, rules are prescribed for securely guarding the belting, shafting, gearing and drums, when so placed as to be dangerous to persons employed; for protection in respect to the openings of hoistways, hatchways, elevator and well-holes upon every floor of a factory, and for safety appliances that will prevent the fall of a cab or car, in the event of the breaking of the hoisting

ropes or machinery ; for properly constructed stairways and fire-escapes. Each story must be amply supplied with the means of extinguishing fires ; and all main doors shall, in factories and public buildings, open outwardly when the inspector shall so direct.

We have an act to secure better provisions for escape from hotels and boarding-houses, in case of fire ; and an act in relation to safety appliances in hotels and public buildings ; an act to prevent the construction of wooden flues for heating or ventilating purposes ; an act relating to providing means of communication between rooms in manufacturing establishments where machinery is propelled by steam, and the room where the engineer is stationed.

For the successful administration of such laws, much depends upon the experience and fitness of the inspector. It is certainly creditable to the managers of the vast industrial interests of the State which I represent that they have so generally complied with the requirements of statutes which, until of recent date, had no parallel in the legislation of States adjacent.

I cannot refrain from calling your special attention to the requirements, by law, of school attendance of children, before and during their employment, up to a certain age. I have been deeply impressed with the results that have attended the enforcement of the school laws in my own State. Eighty per cent. of the children who were permitted to work before the law was enacted are now at school, obtaining an education, an education which changes drudgery into intelligent labor, and better fits them for the burdens and blessings of citizenship. More than that, an education that changes laborers into workmen, and from the ranks of the workmen, master workmen and inventors, and with the present age, inventors and their wonderful works.

The free school for all children, rich or poor, was born in Boston, and was adopted by the colonists as their numbers increased. The free competition in studies soon demonstrated the equal mind power of all classes.

Europe does not believe in the equal mental capacity of the children of the poor, but here the industrial classes, by adding mind power to strength, and putting the combination into practical service, have done more in two centuries for the elevation and redemption of humanity than all the men of antiquity and property ever accomplished.

The true American system has been, and is, to develop and combine mind power with hand power—skilled labor of head and hand ; and they produce the grandest and noblest manhood, a manhood that not only believes in equal rights under the law, but in the majesty of the law. Man without the school-house is only an animal. With strength, and mind, and heart, educated and developed, he is truly the noblest work of God.

In a letter from one who, while living, was honored throughout the land, and whose memory will ever be revered, to Charles Sumner, dated April 20, 1862, you will find these words : “ In every country the dangerous classes are those who do not work. For instance, the nobility in Europe and the slaveholder here. It is evident the world needs a new nobility, not the gold metal, and sangre azul order ; not of the blood that is blue, because it stagnates, but of the red arterial blood, that circulates, and has a heart in it, and life and labor.” These words of truth are cheering to all who are looking forward and upward in faith, and hope, and love.

The policy of the Commonwealth of Massachusetts, settled from its foundation, and steadily adhered to, in respect to popular education, has been a recognition of the fact that the greatness of a State is measured, not by its geographical extent its commercial advantages, its natural resources, but the moral and intellectual quality of its people. If we look at the grand list of American noblemen the last thirty years have revealed to the world, we will find that they are the product of our schools and our workshops. Should we not, above all other duties, all other considerati

strengthen and maintain the supremacy of laws which have resulted in so many blessings to the human race?

Mr. Fell moved that the proceedings of the Convention be printed, including the address of Mr. Dorn and that of Mr. Wade; which was agreed to.

Mr. Lawrence, President of the Common Council, was unanimously tendered a vote of thanks for courtesies extended to members of the Convention.

On motion of Mr. Hunt, a unanimous vote of thanks was tendered to Henry Dorn for his efforts and success in bringing about this Convention.

On motion of Mr. Ellis, of Ohio, the Chair appointed a Committee on Resolutions, consisting of Messrs. Ellis, Fell, White, Traphagen and Jennings.

On motion of Mr. Fell, the chiefs of Ohio and Massachusetts were added as *ex-officio* members of the above committee.

The Secretary appointed Mr. Traphagen as Assistant Secretary.

The Convention then adjourned until 3 o'clock P. M.

AFTERNOON SESSION.

The minutes of the morning session were read and approved.

Mr Dorn introduced the following resolution on the subject of child labor, which was referred to the Committee on Resolutions:

WHEREAS, Efforts are being made in several States to prevent, by legal enactment, the employment of minors, under specified age, in workshops and factories; and as we believe such laws are demanded by the best interests of mankind, and that they should be universal as well as uniform throughout the United States, therefore be it

Resolved, That it is the sense of this Convention that laws should be enacted by every State in the Union prohibiting the employment of minors under fourteen years of age in any workshop, factory, or mercantile establishment, as we consider it a self-evident proposition that such employment pauperizes the parent and enforces illiteracy on the child, two conditions of society incompatible with republican institutions and the freedom and welfare of man; and that we regard it as the sacred duty of the State to do all that lies in its power to advance the interests of the people and educate the rising generation, to the end that those who, in a few short years, shall become the rulers of the land may be better qualified to direct the destinies of a free people, and to discharge their great obligations in such manner as shall redound to their own credit, and secure the peace, happiness and prosperity of their posterity.

Mr. Fell made a brief statement concerning the inspection and industrial laws of New Jersey.

Mr. Hall spoke on the subject of child labor, and particularly as to the unjust treatment of children in factories.

Mr. Jennings spoke at length on the educational laws of Connecticut. He also strongly indorsed that portion of the address of Mr. Dorn,

in which the latter opposes the combining of the offices of factory inspector and labor statistician.

Mr. Dorn spoke at length on inspection and industrial laws, giving some of his experience as factory inspector.

Mr. White detailed his experience as inspector, and gave a brief history of the factory and industrial laws of Massachusetts.

Mr. Hall moved that all members wishing to introduce resolutions should do so before adjourning this evening, which was agreed to.

Mr. Hunt introduced the following resolution in reference to industrial laws, which was referred to the Committee on Resolutions:

Resolved, That a permanent executive or legislative committee, consisting of one delegate from each State represented in this Convention, shall be appointed by the President, whose duty it shall be to collect copies of all the present factory and workshop laws, and all statistical information appertaining thereto.

Resolved, That said committee be instructed to report to this Convention, if possible, if not, to the next convention of inspectors, some plan whereby a uniform system of factory laws shall be enacted throughout the States taking up factory or workshop legislation.

Mr. Hall introduced the following resolutions, which were referred to the Committee on Resolutions:

Resolved, That all the delegates here be requested to use their efforts to have the school boards of each school district in every State where there is now or may hereafter be a system of factory inspection to have sufficient school accommodation as soon as possible, and that where this cannot be secured immediately that the system of half-time, as in practice in some places, be adopted for all children employed in factories, and all children under twelve years of age.

Resolved, That we use our efforts to secure uniformity in labor laws in the age of all children employed in any capacity whatever, the amount of schooling, and number of hours employed, as follows: Age, not less than fourteen for either sex; schooling, not less than 120 days to sixteen years; hours of work, not over eight per day, and women not over ten.

The Convention then adjourned till nine o'clock to-morrow morning.

THURSDAY, June 9, 1887.

The Convention was called to order by the President promptly at nine o'clock A. M.

The Chair stated that the Sergeant-at-Arms of the Common Council desired to know at what time the members of the Convention would be prepared to visit Girard College.

On motion, one o'clock P. M. was fixed as the time for making the visit, in compliance with the invitation of the President of the Common Council.

Mr. Jennings suggested the propriety of settling on the time and place of the next Convention.

Mr. Dorn expressed his preference for Boston as the place.

On motion of Mr. Dyson, it was agreed that the next Convention be held in Boston, in July or August, 1888, the exact time to be fixed by the officers of this Convention.

On motion of Mr. Jennings, everything relating to expense, printing, general management, etc., was referred to a committee composed of the chiefs of the different States represented, viz., Messrs. Wade, Fell, Dorn and Hine.

The Committee on Resolutions submitted the following :

Resolved, That the reasons for the appointment of factory inspectors are commensurate with their duties, and that those duties should be—

First—To prevent the employment of young children in work unfitted for their age and strength, and to secure their attendance at school.

Second—To prevent the employment of women in work not suitable for their sex, and for too long daily periods, and to secure for them proper treatment when at work.

Third—To enforce the use of proper safety appliances, and obedience to suitable sanitary regulations in factories and workshops.

Resolved, That the duties of factory inspectors and of labor statisticians are so entirely different in scope and aim that the two departments should not be directed and supervised by the same chief.

WHEREAS, A uniformity of laws and of practice under them seems desirable in different States, especially in those whose territory is contiguous,

Resolved, That the report of this Convention should contain a statement, as accurate as it can be made, of those laws and the practice in different States, for the general information of the public.

Resolved, That it is the experience of the factory inspectors here assembled that the enforcement of laws relating to child labor and to providing proper safety and sanitary appliances has been beneficial to all concerned.

Mr. D'Arcy moved that the report be adopted as read.

Mr. Hall opposed the resolutions reported by the Committee as not being sufficiently explicit.

Mr. Dyson favored the report, but felt a delicacy in advising any particular legislation except for his own State.

Mr. Jennings took the ground that our work was the general good of all, and not of any class; that the object of this body should be to report facts upon which the people could base conclusions.

Mr. White thought the best way to extend the laws would be for the inspectors to see to it that they were enforced, as it had been shown that they were of great benefit to both employer and employe.

Mr. Buxton claimed that the young men and women of Massachusetts were preferred as employes on account of their intelligence, the natural result of the school system of the State.

Mr. Dorn could not see or understand how the resolutions introduced by him could be interpreted to mean dictation to the law-making power of the different States. He therefore was opposed to the resolutions as reported by the committee.

Mr. Hunt thought the labor bureau of Massachusetts gave the statistical information, and it was for us to give our opinions and the information upon which they were based.

Mr. Ellis thought we should request the different legislatures to pass uniform laws, so as to protect the people of those States having industrial laws.

Mr. Fell thought that upon a careful consideration of the report of the committee, after reading the different resolutions offered, members would find that they were consistent with those offered, and covered all the points involved.

Mr. Hall moved to add to the report of the committee the following, which was agreed to :

Resolved, That the members of this Convention be required to use all proper means to secure a uniformity of inspection laws in all the States having manufacturing industries.

Mr. Dorn moved the previous question, which was sustained ; and the report of the Committee, as amended, was then adopted.

On motion of Mr. Hunt, the thanks of the Convention were tendered the officers for efficient services during the session.

Mr. Dorn offered the following resolution, which was adopted :

Resolved, That the thanks of this Convention are due, and are hereby tendered, to his honor the Mayor and to the President of the Common Council of the City of Philadelphia for the many courtesies they have shown us, and we especially thank the Common Council for the free use of the hall in which we have held our sessions.

Mr. Traphagen moved that the officers of the Convention take such action as to them may seem advisable toward inducing the Patent Office to require that all dangerous machinery shall be properly guarded before issuing a patent therefor. After being amended by substituting a committee of three for the officers of the Convention, the motion was agreed to ; and Messrs. Traphagen, Hunt, and Hall were appointed said committee.

Mr. Dorn spoke at length of the great danger of double-governor belts, and of the false economy of having boiler and engine in the same room ; also, of fire-escapes, pulleys and shaftings, emery-wheels and grindstones, buzz, swing, and band saws, elevators, ventilation and heating, fly-wheels, gearings, etc.

The Convention adjourned to 1 o'clock P. M.

AFTERNOON SESSION.

The minutes of the morning session were read and approved.

Mr. White, in response to a request of Mr. Wade, spoke on the means of egress from buildings, and of elevator safety-catches, fly-wheels and gearings.

On motion of Mr. Craigie, the Convention adjourned, subject to the call of the officers.

HENRY DORN,
Secretary and Treasurer.

NOTE.—Messrs. James Connolly and John Franey, factory inspectors of New York, and Henry Siebers, inspector of factories of Wisconsin, were not present during the session of the Convention.

Mr. J. J. Jennings, of Connecticut, represented the Board of Education of his State.

On June 27th Mr. William P. Kelley, of Killingly, was appointed factory inspector of Connecticut; and on July 8th Mr. Leonard R. Campbell, of Rockland, was appointed Deputy Labor Commissioner of Maine. His duties are similar to those of factory inspector.

STATE INSPECTION LAWS.

The following are the laws of the different States providing for the inspection of workshops and factories, relating to the labor of minors, education, etc.

MASSACHUSETTS.

OF THE EMPLOYMENT OF LABOR

SECTION 1. Any person or corporation engaged in manufacturing, which requires from persons in his or its employ, under penalty of forfeiture of a part of the wages earned by them, a notice of intention to leave such employ, shall be liable to the payment of a like forfeiture if he or it discharges without similar notice a person in such employ, except for incapacity or misconduct, unless in case of a general suspension of labor in his or its shop or factory.

SEC. 2. Whoever, by intimidation or force, prevents, or seeks to prevent, a person from entering into or continuing in the employment of a person or corporation shall be punished by fine of not more than one hundred dollars.

SEC. 3. No person or corporation shall, by a special contract with persons in his or its employ, exempt himself or itself from any liability which he or it might otherwise be under to such persons for injuries suffered by them in their employment, and which result from the employer's own negligence, or from the negligence of other persons in his or its employ.

SEC. 4. No minor under eighteen years of age and no woman shall be employed in laboring in any manufacturing or mechanical establishment more than ten hours in any one day, except when it is necessary to make repairs to prevent the interruption of the ordinary running of the machinery, or when a different apportionment of the hours of labor is made for the sole purpose of making a shorter day's work for one day of the week ; and in no case shall the hours of labor exceed sixty in a week.

Every employer shall post in a conspicuous place in every room where such persons are employed a printed notice, stating the number of hours' work required of them on each day of the week ; and the employment of any such person for a longer time in any day than that so stated shall be deemed a violation of this section, unless it appears that such employment is to make up for time lost on some previous day of the same week in consequence of the stopping of the machinery upon which such person was employed, or dependent for employment.

SEC. 5. Whoever, either for himself, or as superintendent, overseer, or other agent of another, employs or has in his employment any person in violation of the provisions of the preceding section, and every parent or guardian who permits any minor to be so employed, shall be punished by a fine of not less than fifty nor more than one hundred dollars for each offense. Said penalty shall extend to corporations. A certificate of the age of the minor, made by him and by his parent or guardian at the time of his employment in any manufacturing establishment, shall be conclusive evidence of his age upon any trial for a violation of the preceding section.

FOR THE PRESERVATION OF THE HEALTH OF FEMALES.

SECTION 1. Every person or corporation employing females in any manufacturing, mechanical or mercantile establishment in this Commonwealth, shall provide suitable seats for the use of the females so employed, and shall permit the use of such seats by them when they are not necessarily engaged in the active duties for which they are employed.

SEC. 2. A person or corporation violating any of the provisions of this act shall be punished by a fine of not less than ten dollars nor more than thirty dollars for each offense.

PROHIBITING THE LOCKING OF DOORS.

SECTION 1. No outside or inside doors of any building, wherein operatives are employed, shall be so locked, bolted, or otherwise fastened, during the hours of labor, as to prevent free egress.

SEC. 2. Any person, firm, or corporation, being the owner, lessee, or occupant of any such building, who shall, after receiving five days' notice in writing from one of the inspectors of factories and public buildings, neglect or refuse to comply with the provisions of the preceding section, shall forfeit to the use of the Commonwealth not less than ten nor more than fifty dollars.

SEC. 3. The inspector of factories and public buildings shall enforce the provisions of this act.

RELATING TO THE EMPLOYMENT OF MINORS AND WOMEN.

SECTION 1. No minor under eighteen years of age shall be employed in laboring in any mercantile establishment more than sixty hours in any one week.

SEC. 2. Whoever, either for himself, or as superintendent, overseer, or other agent for another, employs or has in his employment any person in violation of the provisions of the preceding section, or who fails to post the notice required in section third, and any parent or guardian who permits any minor to be so employed, shall be punished by a fine of not less than fifty nor more than one hundred dollars for each offense. Said penalty shall extend to corporations. A certificate of age of a minor, made and sworn to by him and by his parent or guardian at the time of his employment in a mercantile establishment, shall be *prima facie* evidence of his age in any trial for a violation of the preceding section.

SEC. 3. Every employer shall post in one or more conspicuous places where such persons are employed a printed notice, stating the number of hours' work required of them, not exceeding ten hours in any one day, on each day of the week; and the employment of any such person for a longer time in any day than that so stated shall be deemed a violation of this act, unless it appears that such employment is to make up for time lost on some previous day of the same week.

SEC. 4. Section four of chapter seventy-four of the public statutes, as amended by chapter one hundred and fifty-seven of the acts of the year eighteen hundred and eighty-three, shall not apply to mercantile establishments.

RELATING TO THE EMPLOYMENT OF CHILDREN.

SECTION 1. Section one of chapter forty-eight of the public statutes, as amended by chapter two hundred and twenty-four of the acts of the year eighteen hundred and eighty-three, is amended so as to read as follows: *Section 1.* No child under ten years of age shall be employed in any manufacturing, mechanical, or mercantile establishment in this Commonwealth; and no child under twelve years of age shall be so employed at any time during the days in which the public schools

are in session in the city or town in which he resides. Any parent or guardian who permits such employment shall for such offense forfeit not less than twenty nor more than fifty dollars for the use of the public schools of the city or town.

RELATIVE TO THE PRINTED NOTICE REQUIRED IN MANUFACTURING
ESTABLISHMENTS.

Section four of chapter seventy-four of the public statutes is hereby amended by adding after the word " week " in the eleventh line of said section the following words: The time of commencing and stopping such work, the time to be allowed for stopping and starting machinery, and the time to be taken for dinner ; the form of such printed notice shall be furnished by the chief of the district police, and shall be approved by the attorney-general.

RELATIVE TO REPORTS OF ACCIDENTS.

SECTION 1. All manufacturers and manufacturing corporations shall forthwith send to the chief of the Massachusetts district police a written notice of any accident to an employe while at work in any factory or manufacturing establishment operated by them whenever the accident results in the death of said employe, or causes bodily injury of such a nature as to prevent the person injured from returning to his work within four days after the occurrence of the accident.

SEC. 2. Any person or corporation violating any of the provisions of section one of this act shall be punished by a fine not exceeding twenty dollars.

SEC. 3. The chief of the Massachusetts district police shall keep a record of all accidents so reported to him, together with a statement of the name of the person injured, the city or town where the accident occurred, and the cause thereof, and shall include an abstract of said record in his annual report.

OF THE EMPLOYMENT OF CHILDREN.

SECTION 1. No child under ten years of age shall be employed in any manufacturing, mechanical, or mercantile establishment in this Commonwealth; and no child under twelve years of age shall be so employed during the hours in which the public schools are in session in the city or town in which he resides. Any parent or guardian who permits such employment shall for such offense forfeit not less than twenty nor more than fifty dollars for the use of the public schools of the city or town.

SEC. 2. No child under fourteen years of age shall be so employed, except during the vacations of the public schools, unless during the year next preceding such employment he has for at least twenty weeks attended some public or private day school, under teachers approved under section two of chapter forty-seven, by the school committee of the place where such school is kept, which time may be divided, so far as the arrangements of the school term will allow, into two terms, each of ten consecutive weeks; nor shall such employment continue, unless such child in each and every year attends school as herein provided; and no child shall be so employed who does not present a certificate, made by or under the direction of said school committee, of his compliance with the requirements of this section: *provided*, that a regular attendance, during the continuance of such employment, in any school known as a half-time day school may be accepted by said school committee as a substitute for the attendance herein required.

SEC 3. Every owner, superintendent, or overseer of any such establishment shall require, and keep on file, a certificate of the age and place of birth of every child under sixteen years of age employed therein, so long as such child is so em-

ployed, which certificate shall also state—in the case of a child under the age of fourteen years—the amount of his school attendance during the year next preceding such employment. Said certificate shall be signed by a member of the school committee of the place where such attendance has been had, or by some one authorized by such committee; and the form of said certificate shall be furnished by the secretary of the board of education, and shall be approved by the attorney-general.

SEC. 4. Every owner, superintendent, or overseer of any such establishment, who employs, or permits to be employed, any child, in violation of either of the two preceding sections, and every parent or guardian who permits such employment, shall forfeit not less than twenty nor more than fifty dollars, for the use of the public schools of such city or town.

SEC. 5. The truant officers shall, at least once in every school term, and as often as the school committee require, visit the establishments described in section one, in their several cities and towns, and inquire into the situation of the children employed therein, and ascertain whether the provisions of the four preceding sections are duly observed, and report all violations thereof to the school committee.

SEC. 6. The truant officers may demand the names of the children under sixteen years of age employed in such establishments in their several cities and towns, and may require that the certificates of age and school attendance prescribed in section three shall be produced for their inspection; and a failure to produce the same shall be *prima facie* evidence that the employment of such child is illegal.

SEC. 7. Every owner, superintendent, or overseer in any such establishment, who employs, or permits to be employed therein, a child under fourteen years of age who cannot read and write, while the public schools in the city or town where such child lives are in session, and every parent or guardian who permits such employment, shall, for every such offense, forfeit not less than twenty nor more than fifty dollars for the use of the public schools of such city or town.

OF THE INSPECTION OF BUILDINGS.

SEC. 13. The belting, shafting, gearing, and drums of all factories, when so placed as to be, in the opinion of the inspectors mentioned in section nine of chapter one hundred and three, dangerous to persons employed therein while engaged in their ordinary duties, shall be, as far as practicable, securely guarded.

No machinery, other than steam engines, in a factory shall be cleaned while running, if objected to in writing by one of said inspectors. All factories shall be well ventilated and kept clean.

SEC. 14. The openings of all hoistways, hatchways, elevators, and well-holes upon every floor of a factory, or mercantile, or public building, shall be protected by good and sufficient trap-doors, or self-closing hatches and safety-catches, or such other safeguards as said inspectors direct; and all due diligence shall be used to keep such trap-doors closed at all times, except when in actual use by the occupant of the building having the use and control of the same. All elevator cabs or cars, whether used for freight or passengers, shall be provided with some suitable mechanical device, to be approved by the said inspectors, whereby the cab or car will be securely held in the event of accident to the shipper-rope or hoisting machinery, or from any similar cause.

SEC. 15. All factories and manufacturing establishments, three or more stories in height, in which forty or more persons are employed, unless supplied with a sufficient number of tower stairways, shall be supplied with sufficient fire escapes, properly constructed, upon the outside thereof, and connected with the interior by doors or windows, with suitable landings at every story above the first, including

the attic, if the same is occupied for work-rooms. Such fire-escapes shall be kept in good repair, and free from obstructions. Fire-escapes existing on the first day of July, in the year eighteen hundred and seventy-seven, need not be changed in consequence of the provisions of this section, unless such change is necessary for the protection of life. Cities may, by ordinance, provide that the provisions of this section relating to fire-escapes shall apply to all buildings three or more stories in height within their limits.

SEC. 16. Every room above the second story in factories or workshops in which five or more operatives are employed shall, except as provided in the following section, be provided with more than one way of egress by stairways on the inside or outside of the building; and such stairways shall be, as nearly as may be practicable, at opposite ends of the room. Stairways on the outside of the building shall have suitable railed landings at each story above the first, and shall connect with each story of the building by doors or windows opening outwardly; and such doors, windows, and landings shall be kept at all times clear of obstruction.

SEC. 17. A factory or workshop which, before the fifteenth day of April, in the year eighteen hundred and eighty, had proper fire-escapes, in accordance with section fifteen, need not conform to the provisions of the preceding section, unless since such fire-escapes were constructed there have been such changes in the building or in the number of persons employed therein as to make it, in the opinion of the inspectors, necessary for the protection of life.

SEC. 18. Said inspectors may accept such other provision for escape in case of fire instead of those required by section sixteen as may seem to them to be ample for the purpose; but women or children shall not be employed above the second story in a room from which there is only one way of egress.

SEC. 19. All the main doors, both inside and outside, in the factories shall open outwardly, when the inspectors of factories, in writing, so direct. Each story shall be amply supplied with means for extinguishing fire.

SEC. 20. All churches, school-rooms, hotels, halls, theaters, and other buildings used for public assemblies, shall have means of egress approved by said inspectors, and all doors to the main entrances in such buildings shall swing outwardly, if said inspectors, in writing, so direct. No portable seats shall be allowed in the aisles or passage-ways of any such building during any service or entertainment held therein.

Every building three or more stories in height, in whole or in part used, occupied, leased, or rented, or designed to be used, occupied, leased, or rented for a tenement to be occupied by more than four families, or a lodging-house, shall be provided with a sufficient means of escape in case of fire, to be approved by the inspector of factories and public buildings.

SEC. 21. No explosive or inflammable compound shall be used in any factory in such place or manner as to obstruct or render hazardous the egress of operatives in case of fire.

SEC. 22. Any person or corporation, being the owner, lessee, or occupant of a manufacturing establishment, factory, or workshop, or owning or controlling the use of any building or room mentioned in section twenty, shall, for the violation of any provision of sections thirteen to twenty-one inclusive, be punished by a fine of not less than fifty nor more than five hundred dollars, and shall also be liable for all damages suffered by any employe by reason of such violation; but no criminal prosecution shall be made for such violation until four weeks after notice in writing by an inspector of factories and public buildings of any changes necessary to be made to comply with the provisions of said sections has been sent by mail or delivered to such person or corporation; nor then, if in the meantime such changes have been made in accordance with such modification. Notice to one member of a firm, or to the clerk or treasurer of a corporation, owning, leasing, occupying, or controlling, as

aforesaid, shall be deemed a sufficient notice under this section to all the members of such firm or to such corporation. Nothing in this section shall be so construed as to prohibit a person injured from bringing an action to recover damages for his injuries.

TO PROVIDE AGAINST THE USE OF UNSAFE ELEVATORS.

If any elevator, whether used for freight or passengers, shall, in the judgment of the inspector of factories and public buildings of the district in which such elevator is used, or, in the city of Boston, of the inspector of buildings of said city, be unsafe or dangerous to use, or has not been constructed in the manner required by law, the said inspector shall immediately placard conspicuously upon the entrance to or door of the cab or car of such elevator a notice of its dangerous condition, and prohibit the use of such elevator until made safe to the satisfaction of said inspector. Any person removing such notice or operating such elevator while such notice is placarded, as aforesaid, without authority from said inspector, shall be punished by a fine of not less than ten nor more than fifty dollars for each offense.

COMMUNICATION BETWEEN ROOMS.

SECTION 1. In every manufacturing establishment where the machinery used is propelled by steam communication shall be provided between each room where such machinery is placed and the room where the engineer is stationed by means of speaking tube, electric bells, or such other means as shall be satisfactory to the inspectors of factories: *provided*, that in the opinion of the inspectors such communication is necessary.

SEC. 2. The inspectors of factories shall enforce the provisions of this act, and any person, firm or corporation, being the occupant of any manufacturing establishment, or controlling the use of any building or room where machinery propelled by steam is used, violating the provisions of this act shall forfeit to the use of the commonwealth not less than twenty-five nor more than one hundred dollars; but no prosecution shall be made for such violation until four weeks after notice in writing by an inspector has been sent by mail to such person, firm or corporation of any changes necessary to be made to comply with the provisions of this act, nor then if in the meantime such changes have been made in accordance with such notification.

TO SECURE PROPER SANITARY PROVISIONS.

SECTION 1. Every person employing five or more persons in a factory, or employing children, young persons or women, five or more in number, in a workshop, shall keep such a factory or workshop in a cleanly state and free from effluvia arising from any drain, privy or other nuisance.

SEC. 2. Every person employing five or more persons in a factory, or employing children, young persons or women, five or more in number, in a workshop, shall provide, within reasonable access, a sufficient number of proper water-closets, earth-closets or privies, for the reasonable use of all persons so employed; and wherever male and female persons are employed in the same factory or workshop a sufficient number of separate and distinct water-closets, earth-closets or privies shall be provided for the use of each sex, and shall be plainly designated, and no person shall be allowed to use any such closet or privy assigned to persons of the other sex.

SEC. 3. When it appears to an inspector of factories that any act, neglect or default in relation to any drain, water-closet, earth-closet, privy, ash-pit, water-supply, nuisance or other matter in a factory or in a workshop, included under section

one of this act, is punishable or remediable under chapter eighty of the public statutes, or under any law of the commonwealth relating to the preservation of the public health, but not under this act, such inspector shall give notice in writing of such act, neglect or default to the board of health of the city or town within which such factory or workshop is situate, and it shall thereupon be the duty of such board of health to make inquiry into the subject of the notice, and to take such action thereon in the way of enforcing any provision of law within its authority as the facts may call for.

SEC. 4. Any person violating any provision of sections one and two of this act shall be punished by fine not exceeding one hundred dollars; but no criminal prosecution shall be made for such violation until four weeks after notice in writing by an inspector of factories of the changes necessary to be made to comply with the provisions of said sections has been sent by mail or delivered to such person, nor then if in the meantime such changes have been made in accordance with such notification. A notice shall be deemed a sufficient notice under this section to all the members of a firm or to a corporation when given to one member of such firm, or to the clerk, cashier, secretary, agent or any other officer having charge of the business of such corporation, or to its attorney; and in the case of a foreign corporation notice to the officer having the charge of such factory or workshop shall be sufficient; and such officer shall be personally liable for the amount of any fine in case a judgment against the corporation is returned unsatisfied.

PROPER VENTILATION OF FACTORIES AND WORKSHOPS.

SECTION 1. Every factory in which five or more persons are employed, and every workshop in which children, young persons or women, five or more in number, are employed, shall be so ventilated while work is carried on therein that the air shall not become so exhausted as to be injurious to the health of the persons employed therein, and shall also be so ventilated as to render harmless, so far as is practicable, all the gases, vapors, dust, or other impurities generated in the course of the manufacturing process or handicraft carried on therein that may be injurious to health.

SEC. 2. If in a factory or workshop included in section one of this act any process is carried on by which dust is generated and inhaled to an injurious extent by the persons employed therein, and it appears to an inspector of factories that such inhalation could be to a great extent prevented by the use of a fan or other mechanical means, and that the same could be provided without excessive expense, such inspector may direct a fan or other mechanical means of a proper construction to be provided within a reasonable time, and such fan or other mechanical means shall be so provided, maintained and used.

SEC. 3. Any person employing labor in a factory or workshop and violating any provision of this act shall be punished by fine not exceeding one hundred dollars; but no criminal prosecution shall be made for any such violation unless such employer shall have neglected for four weeks to make such changes in his factory or workshop as shall have been ordered by an inspector of factories, by a notice in writing delivered to or received by such employer.

TO PROHIBIT THE EMPLOYMENT OF CHILDREN IN CLEANING DANGEROUS MACHINERY.

SECTION 1. No child under the age of fourteen years shall be permitted to clean any part of the machinery in a factory while such part is in motion by the aid of steam, water or other mechanical power, or to clean any part of such machinery that is in dangerous proximity to such moving part.

SEC. 2. Whoever, either for himself or as superintendent, overseer or other agent of another, violates the provisions of the preceding section shall be punished by a fine of not less than fifty nor more than one hundred dollars for each offense.

UNIFORM AND PROPER MEAL TIMES FOR CHILDREN, YOUNG PERSONS AND WOMEN.

SECTION 1. All children, young persons and women, five or more in number, employed in the same factory, shall be allowed their meal time or meal times at the same time: *provided, however,* that any children, young persons or women who begin work in such factory at a later hour in the morning than the other children, young persons and women employed therein, may be allowed their meal time or meal times at a different time; but no such children, young persons or women shall be employed during the regular meal hour in tending the machines or doing the work of any other children, young persons or women in addition to their own.

SEC. 2. No child, young person or woman shall be employed in a factory or workshop in which five or more children, young persons and women are employed for more than six hours at one time without an interval of at least half an hour for a meal: *provided, however,* that a child, young person or woman may be so employed for not more than six and one-half hours at one time if such employment ends at an hour not later than one o'clock in the afternoon, and if such child, young person or woman is then dismissed from the factory or workshop for the remainder of the day; or for not more than seven and one-half hours at one time if such child, young person or woman is allowed sufficient opportunity for eating a lunch during the continuance of such employment, and if such employment ends at an hour not later than two o'clock in the afternoon, and such child, young person or woman is then dismissed from the factory or workshop for the remainder of the day.

SEC. 3. This act shall not apply to iron works, glass works, paper mills, letter-press printing establishments, print works, bleaching works or dyeing works; and the chief of the district police, where it is proved to his satisfaction that in any other class of factories or workshops it is necessary, by reason of the continuous nature of the process, or of special circumstances affecting such class, to exempt such class from the provisions of this act, and that such exemption can be made without injury to the health of the children, young persons and women affected thereby, may, with the approval of the governor of the commonwealth, issue a certificate granting such exemption, public notice whereof shall be given in the manner directed by said chief, without expense to the commonwealth.

SEC. 4. The following expressions used in this act shall have the following meanings: The expression "iron works" means any mill, forge, or other premises in or on which any process is carried on for converting iron into malleable iron, steel, or tin plate, or for otherwise making or converting steel. The expression "glass works" means any premises in which the manufacture of glass is carried on. The expression "paper mills" means any premises in which the manufacture of paper is carried on. The expression "letter-press printing establishments" means any premises in which the process of letter-press printing is carried on. The expression "print works" means any premises in which is carried on the process of printing figures, patterns or designs upon any cotton, linen, woolen, worsted, or silken yarn or cloth, or upon any woven or felted fabric, not being paper. The expression "bleaching works" means any premises in which the process of bleaching any yarn or cloth of any material is carried on; the expression "dyeing works" means any premises in which the process of dyeing any yarn or cloth of any material is carried on.

SEC. 5. Whoever, either for himself or as superintendent, overseer, or other agent of another, violates any of the provisions of this act shall be punished by fine

of not less than fifty nor more than one hundred dollars: *provided, however*, that if any minor under eighteen years of age, or any woman, shall, without the orders, consent, or knowledge of the employer, or of any superintendent, overseer, or other agent of the employer, labor in a factory or workshop during any part of any time allowed for dinner or for other meals in such factory or workshop, according to the notice required by law, and if a copy of such notice was posted in a conspicuous place in the room where such labor took place, together with a rule of the establishment forbidding such minor or woman to labor during such time, then neither the employer, nor any superintendent, overseer, or other agent of the employer, shall be held responsible for such labor.

EMPLOYMENT OF MINORS AND WOMEN.

SECTION 1. Section four of chapter seventy-four of the public statutes is hereby amended in the third, fourth and fifth lines of said section by striking out the words "when it is necessary to make repairs to prevent the interruption of the ordinary running of the machinery," and by inserting in place thereof the words, as hereinafter provided in this section, in the eleventh line of said section after the word "week," by inserting the words, the hours of commencing and stopping such work, and the hours when the time or times allowed for dinner or for other meals begins and ends, or in the case of establishments exempted from the provisions of chapter two hundred and fifteen of the acts of the year eighteen hundred and eighty-seven, the time, if any, allowed for dinner and for other meals; the printed form of such notice shall be furnished by the chief of the district police, and shall be approved by the attorney-general; and at the end of said section, after the word "employment," by adding the following: But no stopping of machinery for a shorter continuous time than thirty minutes shall authorize such over-time employment, nor shall any such stopping authorize such employment, unless or until a written report of the day and hour of its occurrence, with its duration, is sent to the chief of the district police, or to the inspector of factories for the district. Any person who makes a false report of such stopping of machinery shall be punished by fine of not less than fifty nor more than one hundred dollars; so that the said section, as amended hereby, and by chapter one hundred and fifty-seven of the acts of the year eighteen hundred and eighty-three, and by section four of chapter two hundred and seventy-five of the acts of the year eighteen hundred and eighty-four, shall read as follows: No minor under eighteen years of age and no woman shall be employed in laboring in any manufacturing or mechanical establishment more than ten hours in any one day, except as hereinafter provided in this section, or when a different apportionment of the hours of labor is made for the sole purpose of making a shorter day's work for one day of the week; and in no case shall the hours of labor exceed sixty in a week. Every employer shall post in a conspicuous place in every room where such persons are employed a printed notice stating the number of hours' work required of them on each day of the week, the hours of commencing and stopping such work, and the hours when the time or times allowed for dinner or other meals begins or ends, or, in the case of establishments exempted from the provisions of chapter two hundred and fifteen of the acts of the year 1887, the time, if any, allowed for dinner and other meals; the printed form of such notice shall be furnished by the chief of the district police, and shall be approved by the attorney-general; and the employment of any such person for a longer time in any day than that so stated shall be deemed a violation of this section, unless it appears that such employment is to make up for time lost on some previous day of the same week in consequence of the stopping of machinery upon which such person was employed or dependent for employment. But no stopping of machinery for a shorter continuous time than thirty minutes shall authorize such over-time employment, nor shall any

such stopping authorize such employment unless or until a written report of the day and hour of its occurrence, with its duration, is sent to the chief of the district police or to the inspector of factories for the district. Any person who makes a false report of such stopping of machinery shall be punished by fine of not less than fifty nor more than one hundred dollars. If any minor under eighteen years of age, or any woman, shall, without the orders, consent or knowledge of the employer, or of any superintendent, overseer, or other agent of the employer, labor in a manufacturing or mechanical establishment during any part of any time allowed for dinner or for other meals in such establishment, according to the notice above mentioned, and if a copy of such notice was posted in a conspicuous place in the room where such labor took place, together with a rule of the establishment forbidding such minor or woman to labor during such time, then neither the employer, nor any superintendent, overseer, or other agent of the employer, shall be held responsible for such employment.

WEEKLY PAYMENT OF WAGES BY CORPORATIONS.

SECTION 1. Section one of chapter eighty-seven of the acts of the year eighteen hundred and eighty-six is hereby amended so as to read as follows: *Section 1.* Every manufacturing, mining or quarrying, mercantile, railroad, street railway, telegraph and telephone corporation, every incorporated express company and water company, shall pay weekly each and every employe engaged in its business the wages earned by such employe to within six days of the date of said payment; and every incorporated city shall so pay every employe engaged in its business, unless such employe shall request in writing to be paid in some different manner; and every municipal corporation not a city, and every incorporated county, shall so pay every employe engaged in its business, if so required by him; *provided, however,* that if at any time of payment any employe shall be absent from his regular place of labor, he shall be entitled to said payment at any time thereafter upon demand. The provisions of this section shall not apply to any employe of a co-operative corporation or association who is a stockholder therein, unless such employe shall request such corporation to pay him weekly; and *provided, also,* that the railroad commissioners, after a hearing, may exempt any railroad corporation from paying weekly any of its employes who, in the opinion of the commissioners, prefer less frequent payments, and when, in their opinion, the interests of the public and such employes will not be injured thereby.

SEC. 2. Section two of said chapter is hereby amended by inserting at the end thereof the following: The chief of the district police, or any state inspector of factories and public buildings, may bring a complaint against any corporation which neglects to comply with the provisions of this act for a period of two weeks after having been notified in writing by such chief or inspector that such complaint will be brought. On the trial of such complaint such corporation shall not be allowed to set up any defense for a failure to pay weekly any employe engaged in its business the wages earned by such employe to within six days after the date of said payment, other than the attachment of such wages by the trustee process, or a valid assignment thereof, or a valid set-off against the same, or the absence of such employe from his regular place of labor at the time of payment, or an actual tender to such employe at the time of payment of the wages so earned by him. No assignment of future wages payable weekly under the provisions of this act shall be valid if made to the corporation from whom such wages are to become due, or to any person on behalf of such corporation, or if made or procured to be made to any person for the purpose of relieving such corporation from the obligation to pay weekly under the provisions of this act.

MINORS WHO CANNOT READ AND WRITE IN THE ENGLISH LANGUAGE.

SECTION 1. Every owner, superintendent or overseer of any manufacturing, mechanical or mercantile establishment who employs, or permits to be employed therein, a minor under fourteen years of age who cannot read and write in the English language, except during the vacation of the public schools in the city or town where such minor lives, and every parent or guardian who permits such employment, shall, for every such offense, forfeit not less than twenty nor more than fifty dollars, for the use of the public schools of such city or town.

SEC. 2. Every person who regularly employs, or permits to be employed, a minor fourteen years of age, or over, who cannot read and write in the English language, providing such minor has been, since reaching the age of fourteen, for one year continuously a resident of a city or town in this commonwealth wherein public evening schools are maintained, and is not a regular attendant of a day or evening school, shall, for every such offense, forfeit not less than fifty nor more than one hundred dollars, for the use of the evening schools of such city or town.

SEC. 3. Whenever it appears that the labor of any minor who would be debarred from employment under section two of this act is necessary for the support of the family to which said minor belongs, or for his own support, the school committee of said city or town may, in the exercise of their discretion, issue a permit authorizing the employment of such minor within such time or times as they may fix, and the provisions of said section two shall not apply to such minor so long as such permit is in force.

SEC. 4. Two weeks next before the opening of each term of the evening schools, the school committee shall, by poster posted in three or more public places of said city or town, give notice of the location of said schools, the date of the commencement of the term, the evenings of the week during which said schools shall be kept, the provisions of section two of this act as to forfeiture for non-compliance with said section, and such regulations as to attendance as they shall deem proper.

RELATING TO THE DUTIES AND POWERS OF INSPECTORS OF FACTORIES AND PUBLIC BUILDINGS.

SECTION 1. Section ten of chapter one hundred and three of the public statutes is hereby amended so as to read as follows: *Section 10.* Such inspectors shall enforce the provisions of sections thirteen to twenty-two, inclusive, of chapter one hundred and four, except as therein specified, and the various provisions of law relating to the employment of women and minors in manufacturing, mechanical or mercantile establishments, and the employment of children, young persons or women in factories or workshops, and the ventilation of factories or workshops, and the securing of proper sanitary provisions in factories or workshops; and for this purpose said inspectors may enter all buildings used for public or manufacturing purposes, or for factories or workshops, examine the methods of protection from accident, the means of escape from fire, the sanitary provisions and the means of ventilation, and may make investigations as to the employment of children, young persons and women.

NEW JERSEY.

LAW RELATING TO THE EMPLOYMENT OF CHILDREN.

1. *Be it enacted by the Senate and General Assembly of the State of New Jersey,* That after the fourth day of July, one thousand eight hundred and eighty-three, no boy under the age of twelve years, nor any girl under fourteen years of age, shall be employed in any factory, workshop, mine, or establishment where the manufacture of any goods whatever is carried on.

2. *And be it enacted,* That on and after the first day of July, one thousand eight hundred and eighty-four, no child between the ages of twelve and fifteen years shall be employed in any factory, workshop, mine, or establishment where the manufacture of any kind of goods whatever is carried on, unless such child shall have attended, within twelve months immediately preceding such employment, some public day or night school, or some well recognized private school; such attendance to be for five days or evenings every week during a period of at least twelve consecutive weeks, which may be divided into two terms of six consecutive weeks each, so far as the arrangement of school terms will permit, and unless such child, or its parents or guardian, shall have presented to the manufacturer, merchant or other employer seeking to employ such child, a certificate giving the name of his parents or guardian, the name and number of the schools attended, and the number of weeks in attendance, such certificate to be signed by the teacher or teachers of such child; *provided,* that in case the age of the child be not known, such teacher shall certify that the age given is the true age, to the best of his or her knowledge and belief; *provided,* that in case of orphan children, where necessity may seem to require, the guardian or others having charge of the same may, upon application to the inspector provided for in this act, receive from him a permit for the employment of such child or children, under such regulations as the said inspector may prescribe.

3. *And be it enacted,* That no child or children under the age of fourteen years shall be employed in any factory, workshop, mill or establishment where the manufacture of any kind of goods is carried on, for a longer period than an average of ten hours in a day, or sixty hours in a week.

4. *And be it enacted,* That every manufacturer, merchant or other employer employing any person contrary to the provisions of this act, or who shall be guilty of any violation hereof, shall be guilty of misdemeanor, and upon conviction be fined for each offense in a sum of not less than fifty nor more than one hundred dollars, and in default of payment of the same shall be imprisoned in the county jail for not less than thirty nor more than ninety days; and that every head of a family, parent or guardian, who knowingly permits the employment of such children shall be likewise subject to a fine of not more than twenty-five nor less than ten dollars for every child so employed, and for each offense, and in default of such payment shall be imprisoned in the county jail for a period of not less than ten days nor more than twenty days; a certificate of the age of the minor, made by him or her, and by his or her parents or guardian at the time of employment, shall be conclusive evidence of the age of such minor upon any trial for the violation of this act; *provided,* that the provisions in this act in relation to the hours of employment shall not apply to or affect any person engaged in preserving perishable goods in fruit-canning establishments.

5. *And be it enacted,* That the governor shall, immediately after the passage of this bill, appoint, with the advice and consent of the senate, some suitable person, who shall be a resident and citizen of this State, as inspector, at a salary of twelve hundred dollars per year, to be paid monthly, whose term of office shall be for three years; the said inspector shall be empowered to visit and inspect, at all reasonable

hours and as often as practicable, the factories, workshops, mines and other establishments in the state where the manufacture and sale of any kind of goods is carried on, and to report to the governor of this state, on or before the thirty-first day of October in each year; it shall also be the duty of said inspector to enforce the provisions of this act, and prosecute all violations of the same in any recorders' courts of cities, and justices of the peace, or other courts of competent jurisdiction in the state.

6. *And be it enacted*, That all necessary expenses incurred by said inspector in the discharge of his duty shall be paid from the funds of the state upon the presentation of proper vouchers of the same; *provided*, that not more than five hundred dollars shall be expended by him in any one year.

7. *And be it enacted*, That all fines collected under this act shall inure to the benefit of the school fund of the district where the offense has been committed.

A SUPPLEMENTARY ACT.

That the inspector and his deputies shall have power to demand a certificate of physical fitness from some regular practicing physician in the case of minors who may seem physically unable to work, and shall have power to prohibit the employment of any minor that cannot obtain such a certificate.

That any parent or guardian who, when so required by the inspector, or one of his deputies, shall furnish to such inspector, or deputy, a certificate from the office of registration of births, or in the absence of such certificate, an affidavit or affidavits of the age of such minor; and if any one shall knowingly swear falsely in any such affidavit, the person or persons so swearing shall be guilty of perjury and liable to indictment and punishment accordingly.

That section four of the act to which this is a supplement shall be amended to read as follows:

4. [*And be it enacted*, That every manufacturer, merchant or other employer, employing any person contrary to the provisions of this act, or who shall be guilty of any violation thereof, shall be liable to a penalty of fifty dollars for each offence, to be recovered in an action of debt in any district court in any city, or before any justice of the peace having due jurisdiction, and that any parent or guardian who knowingly permits the employment of such child or children shall be liable in like action to a penalty of not more than fifty dollars, as the court shall fix; that such action shall be prosecuted in the name of the inspector; the trial shall proceed as other actions of debt, and the first process shall be a summons returnable in not less than five days or more than ten days after issue, and it shall not be necessary to indorse the same as in *qui tam* actions; the finding of the court shall be that the defendant has or has not, as the case may be, incurred the penalty claimed in the demand of the plaintiff, and judgment shall be given accordingly; in case an execution shall issue and be returned unsatisfied, the court, on application, after notice to the defendant, may award an execution to take the body of the defendant, and in case such a defendant is committed under such an execution he shall not be discharged under the insolvent laws of the State, but shall only be discharged by the court making the order for the body execution, or one of the justices of the supreme court, when such court or justice shall be satisfied that further confinement will not accomplish the payment of the judgment and costs; an affidavit of the age of any minor made by its parent or guardian, at the time of its employment, shall be conclusive evidence of the age of such minor, upon any trial against a manufacturer or employer for the violation of this act, but any parent or guardian that shall knowingly swear falsely in such affidavit shall be guilty of perjury, and the inspector or deputy inspector shall be authorized, in case they shall find any minor employed under any false affidavit given as aforesaid, to order and compel such minor to desist

from work; the provisions of this act in relation to the hours of employment shall not apply to or affect any person engaged in preserving perishable goods in fruit-canning establishments.]

COMPULSORY EDUCATION LAW.

1. *Be it enacted by the Senate and General Assembly of the State of New Jersey,* That all parents and those who have care of children shall instruct them, or cause them to be instructed, in spelling, reading, writing, English grammar, geography and arithmetic; and every parent, guardian or other person having control and charge of any child or children between the ages of seven and twelve years shall be required to send any such child or children to a public day school for a period of at least twenty weeks in each year, eight weeks, at least, of which attendance shall be consecutive, unless such child or children are excused from such attendance by the board of the school district in which such parents or guardians reside, upon its being shown to their satisfaction that the bodily or mental condition of such child or children has been such as to prevent his, her or their attendance at school, or that such child or children are taught in a private school, or at home, by some qualified person or persons, in such branches as are usually taught in primary schools.

2. *And be it enacted,* That no child under the age of fifteen years shall be employed by any person, company or corporation to labor in any business whatever, unless such child shall have attended, within twelve months immediately preceding such employment, some public day or night school, or some well recognized private school; such attendance to be for five days or evenings every week during a period of at least twelve consecutive weeks, which may be divided into two terms of six consecutive weeks each, so far as the arrangement of school terms will permit, and unless such child, or his or her parents or guardian, shall have complied with the provisions of the act approved March fifth, eighteen hundred and eighty-three, limiting the employment hours of the labor of children.

3. *And be it enacted,* That every parent, guardian or other person having charge or control of any child from twelve to sixteen years of age, who has been temporarily discharged from employment in any business in order to be afforded an opportunity to receive instruction or schooling, shall send such child to some public or private day school for the period for which such child shall have been discharged, unless such child shall have been excused from such attendance by the inspector of factories and workshops, or by the board of the school district, for reasons as stated in section one hereof.

4. *And be it enacted,* That in case any parent, guardian or other person shall fail to comply with the provisions of sections one and three of this act, such parent, guardian or other person shall be deemed guilty of a misdemeanor, and shall, on conviction, be liable to a fine of not less than ten dollars nor more than twenty-five dollars for the first offense, and of not less than twenty-five dollars for each subsequent offense, or to imprisonment for not less than one month or more than three; the said fines, when paid, to be added to the public school money of said school district in which the offense occurred.

5. *And be it enacted,* That all children between the ages of seven and fifteen years, who are habitual truants from school, or who, while in attendance at any public school, are incorrigible, vicious or immoral in conduct, and all children between the said ages who absent themselves habitually from school, and habitually wander about streets and public places during school hours, having no business or lawful occupation, shall be deemed juvenile disorderly persons and subject to the provisions of this act.

6. *And be it enacted,* That in all cities having a duly organized police force it shall be the duty of the police authority, at the request of the inspectors of factories

and workshops, or of the school authority, to detail one or more members of said force to assist in the enforcement of this act; and in districts having no regular police force, subject to this act, it shall be the duty of the board of education or the school district officers to designate one or more constables of said city, township or village, whose duty it shall be to assist in the enforcement of this act, as occasion may require, and said board of education shall fix and determine the compensation to be paid such police officer or constable for the performance of his duties under the act; members of any police force or any constable designated to assist in the enforcement of this act, as provided in this section, shall be known as truant officers; *provided*, that in districts where no constable resides the said board shall have power to appoint some other suitable person as truant officer.

7. *And be it enacted*, That it shall be the duty of any such truant officer or officers detailed to enforce the provisions of this act to examine into all cases of truancy, when requested so to do by the inspectors of factories and workshops, or by a district school board, and to warn such truants, their parents or guardians, in writing, of the final consequences of truancy, if persisted in, and also to notify the parent, guardian or other person having the legal charge and control of any juvenile disorderly person, that the said person is not attending any school, and to require said parent, guardian or other person to cause the said child to attend some recognized school within five days from said notice, and it shall be the duty of said parent, guardian or other person having the legal charge and control of said child to cause the attendance of said child at some recognized school; if said parent, guardian or other person having the legal charge and control of said child shall willfully refuse, fail or neglect to cause said child to attend some recognized school, it shall be the duty of said officer to make or cause to be made a complaint against said parent, guardian or other person having the legal control and charge of such child, in any court of competent jurisdiction in the school district in which the offense occurred, for such refusal or neglect, and upon conviction thereof said parent, guardian or other person, as the case may be, shall be punished by a fine of not less than ten dollars nor more than twenty-five dollars, or the court may, in its discretion, require the person so convicted to give bond in the penal sum of one hundred dollars, with one or more sureties, to be approved by said court, conditioned that said person so convicted shall cause the child or children under his or her legal charge or control to attend some recognized school within five days thereafter, and to remain at said school during the term prescribed by law; *provided*, that if said parent or guardian, or other person in charge of said child, shall prove inability to cause said child to attend said recognized school, then said parent or guardian, or other person, shall be discharged, and said court shall, upon complaint of said truant officer or other person that said child is a juvenile disorderly person, as described in section five of this act, proceed to hear such complaint, and if said court shall determine that said child is a juvenile disorderly person within the meaning of this act, then said court shall thereupon sentence said child to a juvenile reformatory until such child shall arrive at the age of sixteen years, unless sooner discharged by the board of control of said juvenile reformatory; *provided, however*, that such sentence may be suspended, in the discretion of said court, for such time as the child shall regularly attend school and properly deport himself or herself; it is further provided, that if for any cause the parent or guardian, or other person having charge of any juvenile disorderly person, as defined in this act, shall fail to cause such juvenile disorderly person to attend said recognized school, then complaint against such juvenile disorderly person may be made, heard, tried and determined, in the same manner as is provided for in case the parent pleads inability to cause said juvenile disorderly person to attend said recognized school; and it is further provided, that no child under the age of nine years shall be sent to a juvenile reformatory under the provisions of this act.

8. *And be it enacted*, That it shall be the duty of the officers empowered, detailed, or appointed under the provisions of this act to assist in the enforcement thereof, to institute, or cause to be instituted, proceedings against any parent, guardian, or other person having legal charge and control of any child, or any person, company, or corporation violating any of the provisions of the sections of this act; *provided*, this law shall not be operative in those school districts of the State where there are not sufficient accommodations to seat the children compelled to attend school under the provisions of this act; and that no prosecution shall be instituted against any parent, guardian, or child unless they have received due notification from an officer empowered under this act that they are acting in violation of the provisions of this act.

9. *And be it enacted*, That when there is not within the distance of two miles from the factory or shop in which a child under the age of fifteen years is employed, or from the residence of the child, a recognized efficient school, attendance at a school temporarily approved by an inspector of factories and workshops shall, for the purposes of this act, be deemed attendance at a recognized efficient school, and the inspector of factories shall immediately report to the education department every case of the approval of a school by him under this section.

10. *And be it enacted*, That two weeks' attendance of children between twelve and fifteen years of age at a recognized half-time or evening school shall, for all purposes of this act, be counted as one week at a day school.

11. *And be it enacted*, That when any of the provisions of this act are violated by a corporation, proceedings may be had against any of the officers or agents of said corporation who, in any way, participate in or are cognizant of such violation by the corporation of which they are the officers or agents, and said officers or agents shall be subject to the same penalties as individuals similarly offending.

GENERAL FACTORY ACT.

1. *Be it enacted by the Senate and General Assembly of the State of New Jersey*, That any person or corporation engaged in manufacturing, which requires from persons in his or its employ, under penalty of forfeiture of a part of the wages earned by them, a notice of intention to leave such employ, shall be liable to the payment of a like forfeiture if he or it discharges without similar notice a person in such employ, unless in case of a general suspension of labor in his or its shop or factory.

2. *And be it enacted*, That all accidents in workshops, factories, or mines, which result in death, shall be reported at once by the occupier to the inspector of workshops at Trenton, and the city or district physician, where one is employed as such, which notice may be given by mail.

3. *And be it enacted*, That the belting, shafting, gearing, and drums in all factories and workshops, when so placed as to be dangerous to persons employed therein while engaged in their ordinary duties, shall be securely guarded when practicable (possible); if otherwise, then notice of its danger shall be conspicuously posted in the factory or workshop.

4. *And be it enacted*, That no minor under eighteen years of age, or woman, shall be required to clean any part of the mill-gearing or machinery in any factory or workshop while the same is in motion, or work between the fixed or traversing part of any machine while it is in motion by the action of steam, water, or other mechanical power.

5. *And be it enacted*, That the openings of all hoistways, hatchways, elevators, and well-holes upon every floor of a factory, or mercantile, or public building, shall be protected by good and sufficient trap-doors or self-closing hatches and safety-catches, or strong guard-rails at least three feet high, and all due diligence shall be

used to keep such trap-doors closed at all times, except when in actual use by the occupant of the building having the use and control of the same.

6. *And be it enacted*, That no explosive or inflammable compound shall be used in any factory, in such place and manner as to obstruct or render hazardous the egress of operatives in case of fire.

7. *And be it enacted*, That no minor under the age of sixteen shall be employed in any manufacturing, mercantile, or mechanical establishment more than ten hours a day or sixty hours a week.

8. *And be it enacted*, That suitable places shall be provided in all factories and workshops where girls or women are employed, where unclean work of any kind has to be performed, for such girls or women to wash and dress, and that stairs in use by female employes in all factories and workshops be properly screened.

9. *And be it enacted*, That separate water-closets be provided for the use of employes of either sex in all manufacturing, mercantile, and mechanical establishments where persons of both sexes are employed.

10. *And be it enacted*, That where the factories or workshops appear so overcrowded that, in the opinion of the inspectors of factories, there is danger to health, the inspectors shall have power, after being supported in their opinion by some reputable resident physician, to prohibit such overcrowding.

11. *And be it enacted*, That the inspector of factories shall have power to order a fan or other mechanical means of proper construction, if practicable, for the purpose of preventing the inhalation of dust in establishments where any process is carried on by which dust is generated and inhaled by the workers to an injurious extent.

12. *And be it enacted*, That all factories and mines be ventilated so as to render harmless all impurities as near as may be.

13. *And be it enacted*, That no cellar, room, or place shall be occupied as a bake-house which is less than one-half of its height above the level of the street, footway, or ground adjoining the same, unless the following regulations are complied with: First, no water-closet, earth-closet privy, or ash-pit shall be within or communicate directly with the bake-house; second, no drain or pipe for carrying off sewage or other impure matter shall have an opening within a bake-house, unless such drain or pipe be trapped with a six-inch water-seal, both within and without the wall of the bake-house, and have a ventilating pipe of one-half the size of drain pipe between the wall and the outer trap, and which ventilating pipe shall run two feet above the roof of building.

14. *And be it enacted*, That the sleeping places for workmen and others employed in bake-houses shall be separate and distinct from the places used for the making of bread.

15. *And be it enacted*, That any person or corporation, being the owner, lessee, or occupant of any manufacturing establishment, factory, mine, workshop, or store, or owning or controlling the use of any building or room, shall, for the willful violation of any provision of this act, except sections one and two, be liable to a penalty of fifty dollars for each offense, to be recovered in an action of debt in any district court in any city, or before any justice of the peace having due jurisdiction, and that any employe who shall be guilty of any violation of the provisions of this act shall be liable in a like action to a penalty of fifty dollars; that such action shall be prosecuted by and in the name of the inspector of factories; the trial shall proceed as other actions of debt, and the first process shall be a summons returnable in not less than five days or more than ten after issue, and it shall not be necessary to indorse the same as in *qui tam* actions; the finding of the court shall be that the defendant has or has not, as the case may be, incurred the penalty claimed in the demand of the plaintiff, and judgment shall be given accordingly; in case an execu-

tion shall issue and be returned unsatisfied, the court, on application after notice to the defendant, may award an execution to take the body of the defendant, and in case such defendant is committed under such an execution he shall not be discharged under the insolvent laws of the state, but shall only be discharged by the court making the order for the body execution, or one of the justices of the supreme court, when such court or justice shall be satisfied that further confinement will not accomplish the payment of the judgment and costs; *provided*, nothing herein shall subject any owner of a building or premises to any penalty unless he shall be the proprietor of the business conducted therein.

SUPPLEMENTARY ACT.

1. *Be it enacted by the Senate and General Assembly of the State of New Jersey*, That every person shall, within one month after he begins to occupy a factory or workshop, notify one of the factory inspectors of such occupancy.

2. *And be it enacted*, That section two of the act to which this is a supplement be amended to read, viz.: 2. *And be it enacted*, That all accidents in workshops, factories or mines, which prevent the injured person or persons from returning to work within two weeks, or which result in death, shall, within twenty-four hours after the expiration of such two weeks, or after the death, as the case may be, be reported by the person in charge of such workshop, factory or mine to one of the factory inspectors and to the city or district physician, where there is such an officer, which notice may be given by mail.

3. *And be it enacted*, That section six of the act to which this is a supplement be amended to read as follows: *And be it enacted*, That no minor or woman shall clean any part of the mill gearing or machinery in any factory or workshop while the same is in motion, or work between the fixed or traversing parts of any machine while it is in motion by the action of steam, water or other mechanical power.

4. *And be it enacted*, That all factories, manufacturing establishments or workshops of two or more stories in height, in which thirty (30) or more persons are employed above the first floor thereof, shall be provided with one or (if the proper officials deem necessary) more outside iron fire-escapes, not less than six feet in length and three feet in width, properly and safely constructed, guarded by iron railings not less than three feet in height, and taking in at least two windows at each story, and connected with the interior by easily accessible and unobstructed openings; and the said fire-escapes shall connect by iron stairs, not less than twenty-four inches wide, the steps to be set not less than six inches tread, placed at not more than an angle of forty-five degrees slant, and protected by a well secured hand rail on both sides, with a twelve-inch wide drop-ladder from the lower platform reaching to the ground.

5. *And be it enacted*, That for every twenty persons employed on every floor above the second floor of every factory and workshop there shall be one rope or portable fire-escape, and that each story shall be amply supplied with means for extinguishing fire.

6. *And be it enacted*, That all the main doors, both inside and outside, in factories shall open outwardly, when the inspectors of factories, in writing, so direct, and that no outside or inside door of any building wherein operatives are employed shall be so locked, bolted, or otherwise fastened during the hours of labor as to prevent egress.

7. *And be it enacted*, That no minor below the age of sixteen shall be employed at any work dangerous to health without a certificate of fitness from a reputable physician.

8. *And be it enacted*, That factories and workshops in which women and children are employed, and where dusty work is carried on, shall be limewashed or painted at least once in every twelve months.

9. *And be it enacted*, That an abstract of the factory and workshop laws, to be prepared and furnished by the chief factory inspector, shall be affixed in a conspicuous place at the entrance of every factory and workshop.

10. *And be it enacted*, That if the inspector of factories find that the heating, lighting, ventilation or sanitary arrangement of any shop or factory is such as to be injurious to the health of the persons employed therein, or that the means of egress, in case of fire or other disaster, is not sufficient, or that the belting, shafting, gearing, elevators, drums and machinery in shops and factories are located so as to be dangerous to employes and not sufficiently guarded, or that the vats, pans or structures filled with molten metal or hot liquid are not surrounded with proper safeguards for preventing accident or injury to those employed at or near them, he shall notify the proprietor of such factory or workshop to make the alterations or additions necessary within thirty days; and if such alterations or additions are not made within thirty days from the date of such notice, or within such time as said alterations can be made with proper diligence upon the part of said proprietors, said proprietors or agents shall be deemed guilty of violating the provisions of this act; it shall then be the duty of the inspectors to examine the matter in dispute, and if adverse to the appellant he shall carry out the alterations or additions directed by said inspectors within thirty days as aforesaid and under the like penalty.

11. *And be it enacted*, That section fifteen of the act to which this is a supplement be amended to read as follows: 11. *And be it enacted*, That any person or corporation, being the owner, lessee or occupant of any manufacturing establishment, factory, mine, workshop or store, or owning or controlling the use of any building or room, shall, for the violation of any provision of this act or of the act to which this is a supplement, be liable to a penalty of fifty dollars for each offense, to be recovered in an action of debt in any district court in any city or before any justice of the peace having due jurisdiction, and that any employe who shall be guilty of any violation of the provisions of this act shall be liable in a like action to a penalty of not more than fifty dollars, as the court shall fix; that such action shall be prosecuted in the name of the inspector of factories, the trial shall proceed as other actions upon contract, and the first process shall be a summons, returnable in not less than five days or more than ten days after issue, and it shall not be necessary to indorse the same as in *qui tam* actions; the finding of the court shall be that the defendant has or has not, as the case may be, incurred the penalty claimed in the demand of the plaintiff, and judgment shall be given accordingly; in case an execution shall issue and be returned unsatisfied, the court, on application, after notice to the defendant, may award an execution to take the body of the defendant, and in case such a defendant is committed under such an execution he shall not be discharged under the insolvent laws of the state, but shall only be discharged by the court making the order for the body execution, or one of the justices of the supreme court, when such court or justice shall be satisfied that further confinement will not accomplish the payment of the judgment and costs.

12. *And be it enacted*, That all acts or parts of acts inconsistent with the provisions of this act be and the same are hereby repealed.

OHIO.

TO APPORTION THE STATE OF OHIO INTO INSPECTION DISTRICTS AND FOR OTHER PURPOSES.

SECTION 2. The governor shall appoint one chief inspector, by and with the advice and consent of the senate, who, with the approval of the governor, shall appoint three district inspectors. The chief inspector and district inspectors shall be competent and practical mechanics. The chief inspector shall hold his office for a term of four years, and shall have his office in the state house, where shall be kept the records of his office, and the district inspectors shall hold their office for the term of three years from the first day of May after their respective appointments, and until their successors are appointed and qualified; the first appointment hereunder shall be made within thirty days after the passage of this act; in case of the resignation, removal or death of the chief inspector, the vacancy shall be filled in the manner above provided for the original appointments for the unexpired term only of the position so made vacant.

SEC. 3. The chief inspector and district inspectors shall give their whole time and attention to the duties of their offices respectively; it shall be their duty to visit all shops and factories in their respective districts as often as possible, to see that all the provisions and requirements of this act are strictly observed and carried out; they shall carefully inspect the sanitary condition of the same [and it shall be their duty], to examine the system of sewerage in connection with said shops and factories, the situations and conditions of water-closets or urinals in and about such shops and factories, and also the system of heating, lighting and ventilating all rooms in such shops and factories where persons are employed at daily labor; also as to the means of exit from all such places in case of fire or other disaster, and also all belting, shafting, gearing, elevators, drums and machinery of every kind and description in and about such shops and factories, and see that the same are not located so as to be dangerous to employes when engaged in their ordinary duties, and that the same, so far as practicable, are securely guarded, and that every vat, pan or structure filled with molten metal or hot liquid shall be surrounded with proper safeguards for preventing accident or injury to those employed at or near them; and that all such are in a proper sanitary condition, and are adequately provided with the means of escape in case of fire or other disaster.

SEC. 2573b. The said inspectors shall have entry into all such shops or factories at all reasonable times, and it shall be unlawful for the owner, proprietors, agents or servants in such factories or shops to prevent, at all reasonable hours, their entry into such shops or factories for the purpose of such inspections.

SEC. 2573c. That said inspectors, if they find upon such inspection that the heating, lighting, ventilation or sanitary arrangement of any such shop or factory is such as to be injurious to the health of persons employed or residing therein, or that the means of egress in case of fire or other disaster is not sufficient, or that the belting, shafting, gearing, elevators, drums and machinery in such shops and factories are located so as to be dangerous to employes, and not sufficiently guarded, or that the vats, pans or structures filled with molten metal or hot liquid are not surrounded with proper safeguards for preventing accident or injury to those employed at or near them, shall notify the owners, proprietors or agents of such shops or factories to make the alterations or additions necessary within thirty (30) days; and if such alterations or additions are not made within thirty (30) days from the date of such notice, or within such time as said alterations can be made with proper diligence upon the part of such proprietors or owners, said proprietors, owner or agent so notified shall be deemed guilty of a misdemeanor, and upon conviction

thereof shall be fined not more than two hundred (200) and not less than ten (10) dollars, which fine shall be paid into the treasury of the county in which conviction is had.

SEC. 4. The district inspectors shall make a record of all examinations of shops and factories in their respective districts, showing the date when made, the conditions in which such shops and factories are found, and what changes were ordered, the number of shops and factories in their respective districts, the number of men, women and children employed in each shop or factory, together with all such other facts and information of public interest concerning the condition of such shops and factories as they may deem useful and proper, which record shall be filed in the office of the chief inspector every week, to be by him recorded, and so much thereof as may be of public interest to be included in his annual report.

RELATING TO THE EMPLOYMENT OF MINORS IN WORKSHOPS AND FACTORIES.

SEC. 6986. That no minor under the age of twelve years shall be employed in any factory, workshop or establishment wherein the manufacture of any goods of any kind is carried on.

SEC. 6986aa. No minor under the age of eighteen years shall be employed in any of the places named for a longer period than ten hours a day, and in no case shall the hours of labor exceed sixty in one week; and every employer shall post in a conspicuous place in every room where such persons are employed a printed notice, stating the number of hours required of them in each day of the week; the form of such printed notice shall be furnished by the chief inspector of workshops and factories, and shall be approved by the attorney-general; and it shall also be the duty of every employer of minors to keep a record, which shall be open to the inspection of the chief inspector of workshops and factories and his assistants, giving the name of each minor employed, his or her name, date and place of birth, and present residence of parents or guardians.

SEC. 6986bb. Any person or corporation who shall employ any person contrary to the provisions of this act, or who shall violate any of the provisions of this act, shall, upon conviction thereof, be fined in any sum not less than fifty nor more than one hundred dollars, or imprisoned not less than thirty nor more than ninety days.

SEC. 6986c. It shall be the duty of the inspector of shops and factories to prosecute all violations of this act, when the same shall come to his knowledge, in any court of competent jurisdiction.

FOR THE PRESERVATION OF THE HEALTH OF FEMALE EMPLOYEES.

SECTION 1. *Be it enacted by the General Assembly of the State of Ohio,* That every person or corporation employing female employes in any manufacturing, mechanical or mercantile establishment in this state shall provide suitable seats for the use of the female employes so employed, and shall permit the use of such by them when they are not necessarily engaged in the active duties for which they are employed.

SEC. 2. Any person or corporation violating any of the provisions of this act shall be punished by a fine of not less than ten dollars nor more than seventy-five dollars for each offense.

NEW YORK.

TO REGULATE THE EMPLOYMENT OF WOMEN AND CHILDREN.

SECTION 1. No minor under the age of eighteen years nor any woman under twenty-one years shall be employed at labor in any manufacturing establishment in this state for a longer period than sixty hours in any one week, unless for the purpose of making necessary repairs.

SEC. 2. No child under thirteen years of age shall be employed in any manufacturing establishment within this state. It shall be the duty of every person so employing children to keep a register in which shall be recorded the name, birth-place, age, and place of residence of every person so employed by him under the age of sixteen years. And it shall be unlawful for any manufacturing establishment to hire or employ any child under the age of sixteen years without there is first provided and placed on file an affidavit made by the parent or guardian, stating the age, date, and place of birth of said child; if said child have no parent or guardian, then such affidavit shall be made by the child, which affidavit shall be kept on file by the employer, and which said register and affidavit shall be produced for inspection on demand made by the inspector, assistant inspector, or any of the deputies appointed under this act.

SEC. 3. Every person, firm, or corporation employing women under twenty-one years, or minors under eighteen years of age, in any manufacturing establishment, shall post and keep posted in a conspicuous place in every room where such help is employed, a printed notice stating the number of hours per day for each day of the week required of such persons, and in every room where children under sixteen years of age are employed, a list of their names with their age.

SEC. 4. Any person who knowingly violates or omits to comply with any of the foregoing provisions of this act, or who knowingly employs or suffers or permits any child to be employed in violation of its provisions, shall, on conviction, be punished by a fine of not less than fifty nor more than one hundred dollars, and in default of payment of such fine, by imprisonment for not less than thirty nor more than ninety days.

SEC. 5. No person or corporation employing less than five persons or children, excepting in any of the cities of this state, shall be deemed a manufacturing establishment within the meaning of this act.

SEC. 6. The governor shall, immediately after the passage of this act, appoint, with the advice and consent of the senate, a factory inspector at a salary of two thousand dollars per year, and one assistant at a salary of fifteen hundred dollars per year, whose term of office shall be three years. The said inspector and assistant shall be empowered to visit and inspect, at all reasonable hours, and as often as practicable, the factories, workshops, and other establishments in the state where the manufacture of goods is carried on, and to report to the bureau of labor statistics of this state on or before the thirtieth day of November of each year. It shall also be the duties of said inspector to enforce the provisions of this act, and to prosecute all violations of the same before any magistrate or any court of competent jurisdiction in the state.

SEC. 7. All necessary expenses incurred by said inspectors in the discharge of their duty shall be paid from the funds of the state, upon the presentation of proper vouchers for the same, provided that not more than twenty-five hundred dollars shall be expended by them therefor in any one year.

SEC. 8. It shall be the duty of the owner, agent, or lessee of any manufacturing establishment where hoisting-shafts or well-holes are used, to cause the same to be

properly and substantially inclosed or secured, if, in the opinion of the inspector, it is necessary to protect the life or limbs of those employed in such establishments. It shall also be the duty of the owners, agent, or lessee to provide or cause to be provided such proper trap or automatic doors, so fastened in or at all elevator ways as to form a substantial surface when closed, and so constructed as to open and close by action of the elevator in its passage, either ascending or descending.

SEC. 9. Proper and substantial hand-rails shall be provided on all stairways in manufacturing establishments, and where, in the opinion of the inspector, it is necessary, the steps of such stairs in all such establishments shall be substantially covered with rubber, securely fastened thereon, for the better safety of persons employed in said establishments. The stairs shall be properly screened at the sides and bottom, and all doors leading in or to such factory shall be so constructed as to open outwardly where practicable, and shall be neither locked, bolted nor fastened during working hours.

SEC. 10. Fire-escapes shall be provided on the outside of all factories three or more stories in height, connecting with each floor above the first, well fastened and secured, and of sufficient strength. Stationary stairs or ladders shall be provided on the inside, from the upper story to the roof, as a means of escape in case of fire.

SEC. 11. It shall also be the duty of the owner of such factory, or his agent, superintendent, or other person in charge of the same, to furnish and supply, or cause to be furnished and supplied, in the discretion of the inspector, where machinery is in use, automatic shifters, or other mechanical contrivances, for the purpose of throwing on or off belts or pulleys; and no female under the age of twenty-one years, and no male under eighteen years of age, shall be allowed to clean machinery while in motion. All gearing and belting shall be provided with proper safeguard.

SEC. 12. It shall be the duty of the agent, superintendent, or other person having charge of a factory or workshop, or of any floor or part thereof, to report in writing to the factory inspector all accidents or injury done to any person employed in such factory, within forty-eight hours of the time of the accident, stating as fully as possible the extent and cause of such injury, and the place where the injured person has been sent.

SEC. 13. A suitable and proper wash-room and water-closets shall be provided for females where employed, and the water-closets used by females shall be separate and apart from those used by males, and shall be properly screened and ventilated, and at all times kept in a clean condition.

SEC. 14. Not less than forty-five minutes shall be allowed for the noon-day meal in any manufacturing establishment in this state. The factory inspector, his assistant or any of his deputies shall have power to issue written permits in special cases, allowing a shorter meal time at noon, and such permit must be conspicuously posted in the main entrance of the establishment, and such permit may be revoked at any time the inspector deems necessary, and shall only be given where good cause can be shown.

SEC. 15. The factory inspector, now or hereafter appointed under and by virtue of the provisions of chapter four hundred and nine of the laws of eighteen hundred and eighty-six, is hereby authorized to appoint such number of persons as in his judgment may be necessary, not exceeding eight, who shall be known as deputy factory inspectors, either or any one of whom may be appointed to act as clerk in the main office, and whose duties it shall be to enforce the provisions of this act and of chapter four hundred and nine of the laws of eighteen hundred and eighty-six. The powers of said deputies shall be the same as the powers of the factory inspectors, subject to the supervision and direction of the factory inspector.

SEC. 16. The district attorney of any county of this state is hereby authorized, upon the request of the factory inspector, or either of his deputies, or of any other person of full age, to commence and prosecute to termination before any recorder, police justice, or court of record, in the name of the people of the state, actions or proceedings against any person or persons reported to him to have violated the provisions of this act.

SEC. 17. The traveling expenses of each of said deputies shall be approved by the inspector and audited by the comptroller of the state, before payment, and said deputy inspectors shall have an annual salary of ten hundred dollars, to be paid monthly by the treasurer of state out of any moneys not otherwise appropriated.

SEC. 18. Said factory inspector shall have power to divide the state into districts and assign one of said deputies to each district, and may transfer any of the deputies to other districts in case the best interests of the state require it. The inspector shall have the power of removing any of the deputy inspectors at any time.

SEC. 19. The factory inspector shall receive an annual salary of two thousand dollars, and the assistant factory inspector shall receive an annual salary of fifteen hundred dollars, and they shall make a report to the legislature on or before the tenth day of January of each year; and an office shall be furnished by the capitol commissioner, in the new capitol, as soon as practicable, which shall be set apart for the use of the factory inspector. The factory inspector, his assistant and deputies shall have the same power to administer oaths as is now given to notaries public, in cases where persons desire to verify documents connected with the proper enforcement of this act.

SEC. 20. Any person who violates or omits to comply with any of the foregoing provisions of this act shall be deemed guilty of a misdemeanor, and on conviction shall be punished by a fine of not less than twenty nor more than one hundred dollars, or by imprisonment for not less than thirty nor more than ninety days, or by both such fine and imprisonment.

SEC. 21. A copy of this act shall be posted in each work-room of every manufacturing or mercantile house in this state where persons are employed who are affected by the provisions of this act.

~~SEC. 22.~~ SEC. 22. All acts or parts of acts inconsistent with the provisions of this act are hereby repealed.

WISCONSIN.

POWERS AND DUTIES OF THE BUREAU OF LABOR AND INDUSTRIAL STATISTICS.

SECTION 4. The duties of the said commissioner of the bureau of labor and industrial statistics shall be to collect, collate and publish statistics and facts relative to the manufactures, industrial classes and material resources of the state; and especially to examine into the relations between labor and capital, the means of escape from fire, and protection of life and health in factories and workshops, the employment of illegal child labor, the exaction of unlawful hours of labor from women and children, the educational, sanitary, moral and financial condition of laborers and artisans, the cost of food, fuel, clothing and building material, the causes of strikes and lockouts, as well as kindred subjects and matters pertaining to the welfare of industrial interests and classes.

SEC. 5. The commissioner, his deputy, or the factory inspector shall have power to enter any factory or workshop in which labor is employed, for the purpose

of gathering facts and statistics, or of examining the means of escape from fire, and the provisions made for the health and safety of operatives in such factory or workshop; and in case the officer of the bureau shall discover any violations of or neglect to comply with the laws in respect to child labor, hours of labor for women or children, fire-escapes, and similar enactments now or hereafter to be made, he shall notify the owner or occupant of such factory or workshop, in writing, of the offense or neglect, and if such offense or neglect is not corrected or remedied within thirty days after the service of the notice aforesaid, he shall lodge formal complaint with the district attorney of the county in which the offense is committed or the neglect occur, whereupon that officer shall proceed at once against the offender according to law.

SEC. 6. The factory inspector or any officer of the bureau may examine hotels and lodging or boarding-houses for the purpose of discovering whether they are properly equipped with lawful fire-escapes; and he may post in any hotel, lodging or boarding-house so examined the laws upon this matter, together with his official statement as to whether the said laws are fully complied with by said hotel, lodging or boarding-house; and any hotel, lodging or boarding-house keeper, or other person, who shall mutilate, destroy or remove from any building or buildings the said laws or statement so posted shall be fined fifty dollars for each and every offense upon complaint of any officer of the bureau or any citizen. Whenever any hotel, lodging or boarding-house that has been posted as not complying with the terms of the laws in respect to fire-escapes shall be properly provided and equipped with lawful fire-escapes, and the bureau shall be notified thereof, the commissioner shall at once order a new statement, setting forth that fact, to be posted in said hotel, lodging or boarding-house. And the bureau shall keep a record of all buildings so examined and posted.

SEC. 7. The factory inspector, or any officer of the bureau, may post in any factory or workshop examined by him the laws now or hereafter to be made in respect of child labor, hours of labor, fire-escapes, or other matters pertaining to the health and safety of artisans; and if the owner, manager or proprietor of such factory or workshop, or his agent, or any person whomsoever, shall remove, destroy, or mutilate the laws so posted, he shall, on complaint of any officer of the bureau, or any citizen, be fined fifty dollars for each and every offense.

SEC. 8. The said commissioner shall have power to prescribe blank forms, and transmit them to employers, which shall be filled out clearly and completely, under oath, by the person or persons to whom they are sent, with the facts, statistics and statements asked for, and returned to him within such reasonable time as he may fix. In case any owner or occupant, or his agent, shall refuse to admit any officer of the said bureau to his workshop or factory, he shall forfeit the sum of ten dollars for each and every offense, and if he shall, through his agent or otherwise, neglect, fail, or refuse to fill out the said blank forms, and verify and return them as required, he shall forfeit the sum of ten dollars for each and every day the said blanks may be so delayed beyond the time fixed by the commissioner for their return. The forfeits named and provided in this act shall be sued for in the name of the state, by the district attorney of the proper county, upon complaint of any officer of said bureau, or any citizen, and shall be paid into the school fund.

PASSENGER AND OTHER ELEVATORS.

SECTION 1. The state factory inspector, his assistant, or any officer of the bureau of labor and industrial statistics, may examine elevators used for carrying freight or passengers, or both, and shall condemn those found to be defective or unsafe, by written notice given to the proprietor or owner, or the agent of either, or by posting said notice on the elevator walls or cab; and if any elevator so con-

demned shall be continued in use without repairs, and loss of limb or life result therefrom, the owner or proprietor so keeping it in use shall be held fully responsible, civilly and criminally, for said loss of life or limb.

SEC. 2. The said factory inspector or any officer named in section one of this act shall have power to order bull-wheels, fly-wheels, tumbling-rods, elevator wells, stairways, shafting, or dangerous machinery of any kind, to be guarded and protected, so as not to hazard the safety of workmen or visitors. Any person refusing to obey his orders in this respect shall be fined fifty dollars for each and every offense.

SEC. 3. Whenever the state factory inspector, or his assistant, or any officer of the bureau of labor and industrial statistics, shall file complaint with any district attorney that any hotel, factory, or public building, or any structure whatsoever in his county, is being used without the fire-escapes, watchmen, or other means of safety prescribed by law, the said district attorney shall at once proceed against the offender according to law; and shall, without further aid or presence of the state factory inspector, or the other officers named in this section, secure the necessary witnesses and evidence for the complete information of the jury; and in case he shall refuse so to do, the state factory inspector, or any officer named in this act, may file charges against him with the governor and ask his removal for willful neglect of duty and malfeasance of office.

FIRE ESCAPES—FACTORIES.

SECTION 1. Section 4575a of the Revised Statutes is amended so as to read as follows:

Section 4575a. Any person, persons, or body corporate owning, occupying, or controlling any factory, workshop, or structure three or more stories high, in which several persons are employed at any kind of labor, on or above the third floor or story, shall provide and keep connected with the same one or more good and substantial metallic or fire-proof ladders, stairs or stairways, ready for use at all times, reaching from the cornice to the ground, on the outside of such building, and placed in such position as to be easy of access to the occupants of such building in case of fire, and sufficient to furnish reasonable means of escape to the persons employed therein from each and every floor or story. And any such person, persons, or corporate body who shall, for three months after the passage and publication of this act, fail to provide and keep such means of escape from fire, shall be subject to a fine not exceeding one hundred dollars, or to imprisonment in the county jail not exceeding three months, at the discretion of the court.

OUTWARD SWINGING DOORS.

SECTION 1. All churches, public and private school-houses, hotels, factories, or other manufacturing establishments, constructed at any time after the passage of this act, shall be so constructed that the doors shall swing outward, or both in and out, as the builders thereof may elect.

DUTIES OF ARCHITECTS AND OTHERS.

SECTION 1. Any architect who shall draw plans for or superintend the erection of any school-house, church, hall, factory, or hotel, without providing in said plans the fire-escapes and outward-swinging doors now required by law, shall be guilty of a misdemeanor, and on conviction thereof shall be fined twenty-five dollars for the first offense, and one hundred dollars for each subsequent offense.

SEC. 2. Any person or persons, body corporate, official or officials, who shall erect or cause to be erected any building named in this act without providing the

fire-escapes and outward-swinging doors, or who shall neglect to provide the same required by law, shall be guilty of a misdemeanor, and upon conviction thereof shall be fined one hundred dollars.

BLACKLISTING EMPLOYES.

SECTION 1. Any two or more employes who shall agree, combine, and confederate together for the purpose of interfering with or preventing any person or persons seeking employment from obtaining such employment, either by threats, promises, or by circulating or causing the circulation of a so-called black-list, or by any means whatsoever, or for the purpose of procuring and causing the discharge of any employe or employes by any means whatsoever, shall be deemed guilty of a misdemeanor, and upon conviction shall be punished by imprisonment in the county jail for a period of not more than one month, or by a fine of not less than fifty dollars, or by both.

HOURS OF LABOR.

SECTION 1729, Revised Statutes. In all engagements to labor in any manufacturing or mechanical business, where there is no express contract to the contrary, a day's work shall consist of eight hours, and all engagements or contracts for labor in such cases shall be so construed; but this shall not apply to any contract to labor by the week, month, or year.

SEC. 1728. In all manufactories, workshops, and other places used for mechanical or manufacturing purposes, the time of labor of children under the age of eighteen years and of women employed therein shall not exceed eight hours in one day; and any employer, stockholder, director, officer, overseer, clerk, or foreman who shall compel any woman or any such child to labor exceeding eight hours in any one day, or who shall permit any child under fourteen years of age to labor more than ten hours in any one day in any such place, if he shall have control over such child sufficient to prevent it, or who shall employ at manual labor any child under twelve years of age in any factory or workshop where more than three persons are employed, or who shall employ any child of twelve and under fourteen years of age in any such factory or workshop for more than seven months in any one year, shall be punished by a fine not less than five nor more than fifty dollars for each such offense.

INTERFERING WITH LABORERS OR MACHINERY.

SECTION 1. Any person who, by threats, intimidation, force, or coercion of any kind, shall hinder or prevent any other person from engaging in or continuing in any lawful work or employment, either for himself or as a wage-worker, or who shall attempt to so hinder or prevent, shall be punished by a fine not exceeding one hundred dollars, or by imprisonment in the county jail not more than six months, or by both fine and imprisonment, in the discretion of the court.

SEC. 2. If any person who shall, individually or in association with one or more others, willfully break, injure, or remove any part or parts of any railway car or locomotive, or any other portable vehicle or traction engine, or any part or parts of any stationary engine, machine, implement, or machinery, for the purpose of destroying such locomotive, engine, car, vehicle, implement, or machinery, or of preventing the useful operation thereof, or who shall in any other way willfully or maliciously interfere with or prevent the running or operation of any locomotive, engine, or machinery, shall be punished by fine not exceeding one thousand dollars, or by imprisonment in the county jail or state prison not exceeding two years, or by both fine and imprisonment, in the discretion of the court.

CONSPIRACY OR BOYCOTTING.

SECTION 1. Any two or more persons who shall combine, associate, agree, mutually undertake or concert together for the purpose of willfully or maliciously injuring another in his reputation, trade, business, or profession, by any means whatever, or for the purpose of maliciously compelling another to do or perform an act against his will, or preventing or hindering another from doing or performing any lawful act, shall be punished by imprisonment in the county jail not more than one year, or by fine not exceeding five hundred dollars.

CONNECTICUT.

CHILD LABOR.

SECTION 1. No child under thirteen years of age shall be employed in any mechanical, mercantile, or manufacturing establishment.

SEC. 2. Any person acting for himself, or as agent in any way whatever, of any mechanical, mercantile, or manufacturing establishment, who shall employ, or authorize or permit to be employed in such establishment, any child in violation of the preceding section, shall be fined not more than sixty dollars, and every week of such illegal employment shall be a distinct offense; provided, that no person shall be punished under this act for the employment of any child when, at the time of such employment, the employer shall demand and thereafter during such employment keep on file the certificate of any town clerk, or of the teacher of the school where such child last attended, stating that such child is more than thirteen years of age, or a like certificate of the parent or guardian of such child in such cases only where there is no record of the child's age in the office of the town clerk, and such child has not attended school in this state. Any parent or guardian who shall sign any certificate that his child or ward is more than thirteen years of age, when in fact such child or ward is under thirteen years of age, shall be fined not more than sixty dollars.

SEC. 3. It shall be the duty of the state board of education and the school visitors, boards of education, and town committees of towns to enforce this act; and for that purpose the state board of education may appoint agents, under its supervision and control, for terms of not more than one year, who shall be paid not to exceed five dollars per day for time actually employed and necessary expenses, and whose accounts shall be approved by said board and audited by the comptroller.

CONCERNING THE INSPECTION OF FACTORIES.

SECTION 1. *Be it enacted by the Senate and House of Representatives in General Assembly convened,* The governor shall appoint an inspector of factories who shall hold his office from the first day of July, 1887, till the first day of July, 1889, and until his successor is appointed and qualified. The governor shall, with the consent of the senate, within sixty days after the organization of the general assembly in January, 1889, and every two years thereafter, appoint an inspector of factories, who shall hold his office from the first day of the succeeding July for a term of two years, and until his successor is appointed and qualified. In case of vacancy in the office of inspector through death, resignation, inability or removal, the governor shall fill the same until filled in the manner above provided for the appointment of inspector; and the governor may remove the inspector for cause.

SEC. 2. The inspector of factories shall, as often as practicable, carefully examine all buildings and places where machinery shall be used, and shall have authority to enter such buildings and places at all proper times for the purpose of such inspection, and shall receive for his services the sum of fifteen hundred dollars per annum, payable monthly, and necessary expenses. He shall, on or before the first day of December in each year, make a report to the governor of the condition, as respects safety to life and health, of the factories, buildings, and places visited by him, and such report shall be printed for the use of the general assembly at each of its regular sessions.

SEC. 3. All factories and buildings where machinery shall be used shall be well ventilated, and kept as clean as the nature of the business will permit. The belting shafting, gearing, machinery, and drums of all factories and buildings where machinery shall be used, when so placed as, in the opinion of the inspector, to be dangerous to persons employed therein while engaged in their ordinary duties, shall, as far as practicable, be securely guarded. No machinery other than steam engines in a factory shall be cleaned while running, after notice forbidding the same is given by the inspector to the owners or operators of the factory.

SEC. 4. The inspector may order the opening of all hoistways, hatchways, elevator-wells, and well-holes upon every floor of any factory or other building where machinery shall be used to be protected by good trap-doors, self-closing hatches, and safety-catches, or other safeguards such as will insure the safety of the employes in such factory or other building where machinery shall be used, and all due diligence shall be used to keep such trap-doors closed at all times, except when in actual use by an occupant of the building having use and control of the same.

SEC. 5. Every person or corporation managing or operating any factory, or owning or controlling the use of any other building where more than five persons shall be employed at labor, shall provide suitable water-closet accommodations for the use of the persons employed, and shall keep the same in good sanitary condition.

SEC. 6. It shall be the duty of the inspector to enforce the provisions of this act by giving proper orders or notices to the persons or corporations owning, operating, or managing the factories or buildings inspected by him, and also to make complaint to the state's attorneys in the several counties, respectively, of all violations of this act.

SEC. 7. Any person, firm or corporation, being the owner, lessee, or occupant of any factory or building included within the provisions of this act, or owning or controlling the use of any room in such building, shall, for a violation of any provision of sections three, four, or five hereof, forfeit to the use of the state not less than fifty nor more than five hundred dollars, and shall also be liable to any employe for all damages suffered by him by reason of such violation. It shall be the duty of the state's attorneys in the several counties to collect forfeitures under this act, but no suit shall be brought for any such violation, either in behalf of any person or the state, until four weeks after notice has been given by the inspector to such person, firm, or corporation of any changes necessary to be made to comply with the provisions of said sections, and not then if, in the meantime, such changes have been made in accordance with such notification. Nothing herein shall be construed as limiting in any way the right of a person injured to bring an action to recover damages for the same, as though this act had not been passed.

SEC. 8. The orders and notices given by the inspector under this act shall be written or printed, and signed by him officially, and may be served by himself or any proper officer or indifferent person, by leaving an attested copy thereof with or at the usual place of abode of the person upon whom service is to be made; and the notice, properly indorsed with the doings of the person or officer serving the same, shall be returned to the office of the town clerk of the town in which is located the

factory, building, or business to which such notice appertains, where it shall be kept on file. Such notice, and copies thereof duly certified by the town clerk, shall be *prima facie* evidence that notice was given as therein appears. Notice to one member of a firm shall be notice to every member thereof, and notice to the president, secretary or treasurer of a corporation shall be notice to such corporation. The fees for serving such orders and notices, unless served by the inspector, shall be the same as for the service of process in civil actions, and shall be included in the necessary expenses of the inspector, and paid by the state.

SEC. 9. It shall be the duty of the comptroller to provide suitable rooms in the capitol at Hartford for the use of the inspector, and to furnish him blank forms for the purpose of giving him notices and orders required by this act and for annual reports to be made to the governor. The inspector shall keep, in books provided by the comptroller for that purpose, copies of all notices and orders given by him, and a record of all inspections and examinations made, and upon the expiration of his term of office shall file his books of record with the secretary of this state.

SEC. 10. The inspector may, from time to time, employ special agents to assist him in his inspections and examinations, who shall receive compensation for the time actually employed in such service only. The total amount expended under section ten of this act shall not exceed in any one year the sum of fifteen hundred dollars, which shall be paid by the state upon proper vouchers by the special agents, which shall be signed by the inspector.

MAINE.

TO REGULATE THE HOURS OF LABOR AND THE EMPLOYMENT OF WOMEN AND CHILDREN.

SECTION 1. No female minor under eighteen years of age, no male minor under sixteen years of age, and no woman shall be employed in laboring in any manufacturing or mechanical establishment in this state more than ten hours in any one day, except when it is necessary to make repairs to prevent the interruption of the ordinary running of the machinery, or when a different apportionment of the hours of labor is made for the sole purpose of making a shorter day's work for one day of the week; and in no case shall the hours of labor exceed sixty in a week; and no male person sixteen years and over shall be so employed as above more than ten hours a day during minority, unless he voluntarily contracts to do so with the consent of his parents, or one of them, if any, or guardian, and in such case he shall receive extra compensation for his services; provided, however, any female of eighteen years of age or over may lawfully contract for such labor for any number of hours in excess of ten hours per day, not exceeding six hours in any one week or sixty hours in any one year, receiving additional compensation therefor; but during her minority the consent of her parents, or one of them, or guardian, shall first be obtained.

SEC. 2. Every employer shall post in a conspicuous place in every room where such persons are employed a notice, printed in plain, large type, stating the number of hours' work required of them on each day of the week, the exact time for commencing work in the morning, stopping at noon for dinner, commencing after dinner, and stopping at night; the form of such printed notice shall be furnished by the deputy commissioner of labor hereafter named, and shall be approved by the attorney-general; and the employment of any such person for a longer time in any day than that so stated shall be deemed a violation of section one, unless it appears that such employment is to make up for time lost on some previous day of the same

week, in consequence of stopping of machinery upon which such person was employed or dependent for employment.

SEC. 3. Whoever, either for himself, or as superintendent, overseer, or agent of another, employs or has in his employment any person in violation of the provisions of section one, and every parent or guardian who permits any minor to be so employed, shall be punished by a fine of not less than twenty-five dollars nor more than fifty dollars for each offense. A certificate of the age of a minor made by him and by his parent or guardian at the time of his employment shall be conclusive evidence of his age in behalf of the hirer, upon any prosecution for a violation of the provisions of section one. Whoever falsely makes and utters such a certificate with an intention to evade the provisions of this act shall be subject to a fine of one hundred dollars.

SEC. 4. It shall be lawful for any person, firm, or corporation engaged in any manufacturing or mechanical business to contract with adult or minor employes to give one week's notice of intention on such employe's part to quit such employment, under a penalty of forfeiture of one week's wages. In such case the employer shall be required to give a like notice of intention to discharge the employe; and on failure shall pay to such employe a sum equal to one week's wages. No such forfeiture shall be enforced when the leaving or discharge of the employe is for a reasonable cause; provided, however, the enforcement of the penalty aforesaid shall not prevent either party from recovering damages for a breach of the contract of hire.

SEC. 5. No child under twelve years of age shall be employed in any manufacturing or mechanical establishment in this state. Whoever, either for himself, or as superintendent, overseer, or agent of another, employs or has in his employment any child in violation of the provisions of this section, and every parent or guardian who permits any child to be so employed, shall be punished by a fine of not less than twenty-five nor more than fifty dollars for each offense.

SEC. 6. No child under fifteen years of age shall be employed in any manufacturing or mechanical establishment in this state except during vacations of the public schools in the city or town in which he resides, unless during the year next preceding the time of such employment he has for at least sixteen weeks attended some public or private school, eight weeks of which shall be continuous; nor shall such employment continue unless such child in each and every year attends some public or private school for at least sixteen weeks, and no child shall be so employed who does not present a certificate made under or by the direction of the school committee, superintendent of the public schools, or the teacher of a private school, that such child has so attended school; and it shall be the duty of such committee, superintendent, or teacher to furnish such a certificate in accordance with the fact, upon request and without charge; provided, that this section shall not take effect until January one, eighteen hundred and eighty-eight.

SEC. 7. Any parent or guardian who procures a child to be employed contrary to section six, and any corporation, owner, superintendent, or agent of the owner of such establishment violating the provisions of said section, shall forfeit the sum of one hundred dollars, one half to the use of the county and one-half to the use of the city or town where the offense is committed. Money so recovered to the use of the city or town shall be added to its school money. It shall be the duties of the school committees and superintendent of public schools to inquire into violations of said section, and report the same to the county attorney, who shall prosecute therefor.

SEC. 8. Every owner, superintendent, or overseer of any such manufacturing or mechanical establishment shall require and keep on file a certificate of the age and place of birth of every child under sixteen years of age employed therein, so long as such child is so employed, which certificate shall also state in the case of a

child under fifteen years of age the amount of his school attendance during the year next preceding such employment. Said certificate shall be signed by a member of the school committee of the place where such attendance has been had, or by some one authorized by such committee; and the form of said certificate shall be furnished by the state superintendent of schools, and shall be approved by the attorney-general. The deputy commissioner of labor hereinafter named, or either of his assistants, may demand the names of the children under sixteen years employed in such establishment, in the several cities and towns of the state, and may require that the certificates of age and school attendance prescribed in this section shall be produced for his inspection, and a failure to produce the same shall be *prima facie* evidence that the employment of such child is illegal.

SEC. 9. The governor, by and with the advice and consent of the council, shall appoint a deputy commissioner of labor, at a salary of one thousand dollars a year, who shall hold office for two years, or until his successor is appointed, unless sooner removed. It shall be the duty of the deputy commissioner of labor to inquire into any violations of this act, and also to assist in the collection of statistics and other information which may be required for the use of the bureau of industrial and labor statistics; and said deputy commissioner shall, in addition to his salary provided by law, be allowed his reasonable expenses. Whenever the governor of this state shall be satisfied the deputy commissioner of labor cannot perform all the duties of his said office required by this section, in person, he shall, with the advice and consent of the council, appoint a sufficient number of assistant deputies to assist him in so doing. Said assistants shall hold their office for the term of two years, and act under the direction of said deputy commissioner of labor, and shall receive the sum of two dollars per day and reasonable expenses while actually engaged in duty. Said assistants may, at any time, be removed for cause by the governor. All bills for the expenses of the deputy commissioner of labor, and for the services and expenses of such assistant deputies, shall be audited by the council. For the purpose of inquiring into any violation of the provisions of this act, and enforcing the penalties thereof, such deputy commissioner and assistants may, at all reasonable times, enter any manufacturing or mechanical establishment and make investigation concerning such violations. Such investigation shall be conducted with as little interruption as possible to the prosecution of the business of such establishment. Whoever interferes with said deputy commissioner or his assistants in the performance of their duties as prescribed in this act shall be fined fifty dollars.

SEC. 10. Nothing in this act shall apply to any manufacturing establishment or business, the materials and product of which are perishable, and require immediate labor thereon to prevent decay thereof or damage thereto.

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FOURTEENTH ANNUAL REPORT

OF THE

BOARD OF TRUSTEES AND OFFICERS

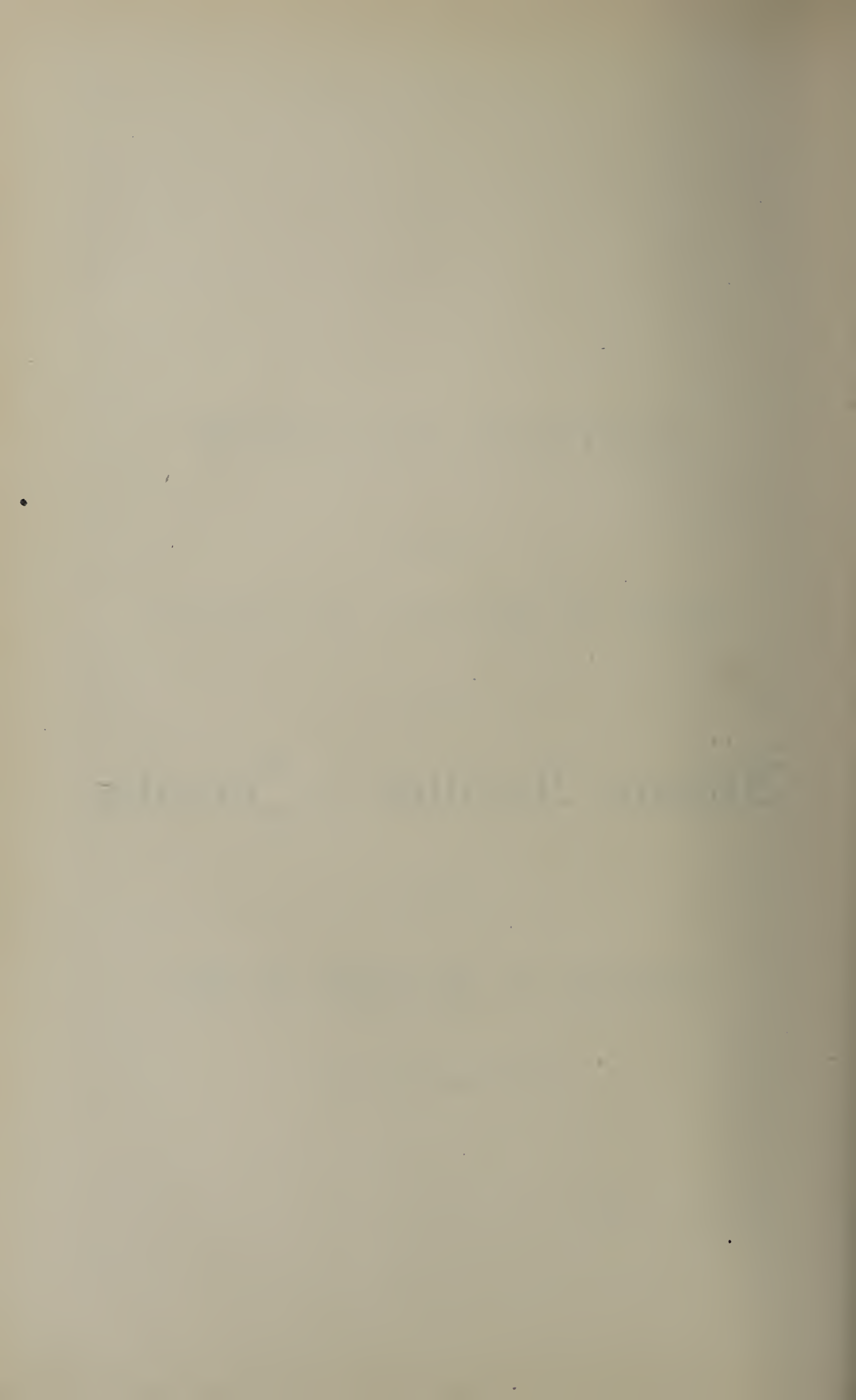
OF THE

Athens Asylum ^{for} _{the} Insane,

TO THE

GOVERNOR OF THE STATE OF OHIO,

FOR THE YEAR 1887.



OFFICERS OF THE ATHENS ASYLUM FOR THE INSANE.

BOARD OF TRUSTEES:

D. M. BARRETT, Esq.,	<i>President,</i>	-	-	-	-	-	-	-	Barrett's Mills.
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JOHN SANNS, M. D.,		-	-	-	-	-	-	-	Gallipolis.

RESIDENT OFFICERS:

A. B. RICHARDSON, M. D.,	- - - - -	Superintendent.
AGNES M. JOHNSON, M. D.,	} - - - - -	Asst. Physicians
CHAS. O. DUNLAP, M. D.,		
W. P. CRUMBACKER, M. D.,		
CHAS. S. McDOUGAL, M. D.,		
R. E. HAMBLIN,	- - - - -	Steward.
U. S. GRANT,	- - - - -	Storekeeper.
MRS. J. D. RICHARDSON,	- - - - -	Matron.

REPORT OF TRUSTEES.

To His Excellency, J. B. FORAKER, Governor of Ohio :

The Trustees of the Athens Asylum for Insane respectfully submit the fourteenth annual report of that institution, as required by law.

The past year has been ended without the occurrence of any serious untoward event, and we are glad to be able to report that the institution is in a properous condition in every respect.

There has been but one change in the official staff during the year. On the 15th of April Dr. H. C. Eyman resigned his position as Assistant Physician, and the vacancy thus made was filled by the appointment, on the nomination of the Superintendent, of Dr. C. O. Dunlap, of McArthur, Ohio.

Dr. Eyman had shown himself competent and trustworthy, and left the institution to the regret of all with whom he was associated. He carries with him our best wishes for success in his new field of labor at the new asylum for the insane at Toledo, Ohio.

During the absence of the Superintendent from June 8th till September 10th, Dr. W. P. Crumbaker acceptably performed the duties of acting Superintendent, and the business and financial affairs were ably conducted by the Steward, Mr. R. E. Hamblin.

We take pleasure in commending each one of the official staff for the zeal and efficiency shown in the discharge of duties more than usually delicate and responsible.

The whole body of employes, with scarcely an exception, have shown a most commendable desire to perform their duties to our entire satisfaction. We desire to express our thanks to them for this spirit, and our appreciation of the arduous duties devolving upon them.

The details concerning the internal management of the institution and the results accomplished in the treatment of the insane, as well as the usual financial exhibits, will be found in the reports of the Superintendent and Steward, which are hereto attached.

It will be noticed that the financial condition of the institution is exceedingly gratifying. There will be a balance in the current expense fund to the credit of the institution on the 15th of February next, after

deducting all liabilities then existing, of from \$8,000 to \$10,000. The per capita cost of maintenance, based on the daily average number of patients on the register of the asylum, and the amount received from the State treasury for current expenses and salaries of officers combined, is \$142.72 for the year. Based on the daily average number of patients actually in the asylum, and the same amounts, the per capita cost for the year is \$145.52. This is \$15.49 below the per capita cost of last year, and \$24.72 below that of the year previous.

Among the several facts contributing to this result may be mentioned the larger receipts from counties for clothing furnished patients, owing to the accounts running for the entire year, the unusually low prices of beef and flour, the largely increased number of patients from the opening of the associated dining-rooms and infirmary wards without a corresponding increase in the pay-roll, the diminished waste from the change in the method of dining the patients, and finally, the gradual evolution of a more perfect system of disbursement and purchases, and a more complete supervision of all details of management, through the enlightened experience of continued service by officers and employes. From repeated inspection we know that the patients, since we have had a knowledge of their care, have never been more completely clothed, nor received a more generous diet than during the past year. The effort has been made simply to exercise the utmost care in disbursement and use.

The appropriation for brick smoke-stack has been expended in the construction of a stack after the plans of T. R. Butman, Esq., of Chicago, and the result is most satisfactory. We have now a stack which is both efficient and ornamental, and as durable as the institution itself. The result shows that the draft of the old iron stack was never sufficient to get the best results from our boiler plant, and even thus far our experiments are sufficient to demonstrate that there will be quite a considerable saving in fuel.

The appropriation of \$1,000 for slaughter-house, cattle-sheds, etc., has been expended under the direct supervision of the Steward, and we have now a system of pig-pens, slaughter-house, and sheds for cattle, in every way as complete, tasty and durable, as can be desired, or the future necessity of the institution require.

A new range has been purchased of the John Van Range Company with the appropriation for that purpose; and will soon be in use.

The appropriation for window screens for the new buildings has also been expended, in part, by the purchase of 242 window screens from F. Powell & Co., of Toledo, which are now in place.

A contract was made with the Motherwell Iron Works, of Logan,

Ohio, for the two fire-escapes for the infirmary wards, and they are now constructed and have been in use during the summer as an outside stairway for the patients.

The appropriation for repair of water-closets is being expended under the direction of the Superintendent, in the introduction of improved hoppers and urinals, and the McFarland automatic flushing tanks, manufactured by J. L. Mott & Co., of New York.

The small appropriation of \$500 for improvement of basement has been expended in stone flagging for the basement of the corridors leading to the new buildings. It is entirely insufficient to put the basement in proper and safe condition, and the sum of \$1,000 additional is required to complete the work.

The failure of the legislature to give the usual small appropriation for grading and fencing has interfered considerably with the amount of work accomplished on the grounds, but with the help of patients chiefly, it has been carried steadily forward. We earnestly hope that the small amount asked for these purposes for the coming year will be granted, that the work of beautifying the grounds, and extending the drives and walks for the patients, may not be seriously impaired.

We cordially endorse the remarks of the Superintendent regarding the introduction of the associated dining-rooms. The change has certainly accomplished all that was hoped from it, and their operation is in every way satisfactory.

We feel gratified in saying that the institution has made decided progress during the last year in the enlightened care of the insane, and we believe that for homelike surroundings and individual comforts to patients, it ranks among the foremost of its class in the country.

Among the most urgent wants of the institution for the coming year, is a more efficient protection from fire. The lessons that we have had in Ohio should teach us to leave nothing undone that may aid in protecting these helpless unfortunates from the dreadful calamity of death by fire. While the supply of hose and the means of reaching any room of the building from the interior are fairly efficient, the pressure from the reservoir is not great enough to throw water to the roof of the building, and if fire should originate in that portion, we would be utterly powerless to combat it. We urgently request that an appropriation be made for a fire-pump to be placed in the boiler-house and connected with the lake in the rear of the grounds, and also for a line of pipe to extend around the building on the outside, with the necessary hydrants. This will enable us to turn at once a good pressure on the entire building, both inside and outside, and reach any portion with several streams of water.

We cordially concur with all the other recommendations of the Superintendent regarding the wants of the institution, and hope that the legislature may be in position to grant our requests.

A contract was made with Messrs. Lama and Barber, of Nelsonville, for all the coal required for the use of the institution during the year ending August 31st, 1888, at the rate of \$1.64 per ton for best quality double screened lump, and \$1.13 for best nut coal, delivered in the coal house of the institution.

The following is a list of the appropriations required for the coming year:

Current expenses.....	\$110,000 00
Salaries of officers	5,800 00
Expenses of trustees.....	600 00
Ordinary repairs.....	6,000 00
Carpets.....	1,000 00
Furniture.....	2,000 00
Grading.....	1,500 00
Fencing.....	500 00
Machinery for carpenter and engineer shops.....	500 00
Fire-pump, pipe, hydrant and hose.....	3,100 00
Bath-tubs and fixtures.....	1,000 00
Books and pictures.....	300 00
Painting.....	2,000 00
Plastering and repairing basement	1,000 00
Horses and carriages.....	500 00
Veranda	2,500 00
	<hr/>
	\$138,300 00

Respectfully submitted.

D. M. BARRETT, *President*,
H. M. HORTON,
THEO. F. DAVIS,
H. M. LASH,
JOHN SANNS,

Trustees.

REPORT OF THE SUPERINTENDENT.

To the Board of Trustees of the Athens Asylum for the Insane:

GENTLEMEN: I have the honor to submit herewith the annual report of the Superintendent of the Athens Asylum for the Insane for the year ending November 15, 1887.

There were on the records of the institution November 16, 1886, 378 males and 393 females. The first admissions during the year number 95 males and 80 females. There were readmitted during the year 31 males and 25 females.

There were 157 patients discharged during the year. Of these, 43 males and 52 females were discharged as recovered, 20 males and 20 females as improved, and 12 males and 10 females as unimproved. Thirty-seven males and 30 females died during the year.

Of the admissions 57 were above 50 years of age, and of the deaths 25 were in persons over 60 years old. Twelve patients died within one month after admission and 22 within three months.

The proportion of recoveries to the admissions for the year is 34.40 for males and 49.57 for females. The death rate based on the average number resident during the year is 9.39 for males and 7.73 for females. Computed on the whole number of cases under treatment during the year the rate is 7.34 for males and 6.00 for females.

The male admissions have been unusually unfavorable, quite a number being advanced in life, or greatly debilitated. There has been no unusual sickness among the patients and very few deaths from acute or preventable complications, yet the rate is rather higher than the average, and the recovery rate for males somewhat lower. The character of the annual admissions for the past two years is sufficient to account for this and a word of explanation on the subject may not be inappropriate.

My predecessor, Dr. Rutter, very appropriately called attention in one of his annual reports to the unreliability of asylum statistics regarding rates of recovery in the flexibility of which they are susceptible, dependent upon the varying views of different determining officials

There is also a large element of unreliability affecting both the recovery and mortality rates due to the degree of selection exercised in the admission of patients. We report year after year certain rates of recovery and mortality in the various institutions for the care of the insane, and these go forth as the rates possible or usual among the insane population of a state or county, without taking into consideration the number of applications rejected nor how nearly the institution provides accommodation for the insane population of the district contiguous to it. The importance of this becomes evident when we consider that in nearly every State in the Union asylum accommodation is not afforded for more than two-thirds or three-fourths of the insane population. Some of the asylum districts in our own State have more than one-half of their insane in the county infirmaries. Under the laws of our State this permits, in fact requires, such a selection among the applications for admission to the asylum of the district as to entirely invalidate the resulting rates of recovery and mortality for general statistical purposes.

Through the increase in the capacity of this institution within the past two years without corresponding enlargement of the district, we have been able to receive about 150 chronic cases from the infirmaries, and have now over 85 per cent. of the insane population of the district that require public care, exclusive of epileptics, in the institution, and during two years last past have rejected but 13 out of 621 applications for admission. The consequence is that while the institution is more nearly answering its beneficent purposes in providing for so large a proportion of the insane of the district, it is at the same time receiving a larger proportion of unfavorable cases, and the resident population has had incorporated into it an element that must of necessity affect the rate of mortality for some time in the future. Some of the results are shown in the figures of the year's work, which I have given above. Another fact is that of the 584 patients admitted during the two years, 232 were chronic cases of more than one year's duration.

The last annual report of the Commissioners of Lunacy for England shows that the rate of recovery for ten years past, based on the whole number of cases reported to them as occurring in all England during that period, is 39.91 per cent., and the average annual rate of mortality for the same period, based on the average insane population of the country, was 9.61 per cent.

Taking this as a fair basis for comparisons where the whole insane population is considered, the results in this institution for the past year are near the average to be expected.

There has been no accident of serious consequence during the year. Several cases of measles developed during the past winter and spring,

but, except in one instance due to serious complications, were followed by no unfavorable results.

There has been time during the year to test thoroughly the introduction of congregate dining-rooms and to estimate their value. I do not hesitate to say that their use has proven most satisfactory. The deportment of the more disturbed class—particularly among the female patients—has shown month by month a steady improvement, until now a disturbance of any kind is of comparatively rare occurrence. Above six-sevenths of the entire number of patients dine in the two general dining halls, one for either sex. Forty males and forty females of the more demented, helpless and unclean classes dine in rooms adjoining their day-rooms. An average of about 20 females and 10 males of the more feeble acute cases, and those confined to their wards and beds through sickness and who require special diet, being physically unable to go to the large room, have their meals served directly to them in their separate rooms or wards. An average of probably one male and three females are fed in their wards because of their disturbed condition.

The better supervision of the disbursement of the food and of its condition and quantity, as well as of the deportment of patients and employes, has had a decidedly beneficial effect.

As an economic measure it has also proven of great value. As will be seen from the Steward's report the per capita cost for the year is much below that of any previous year in the history of the institution, and a not unimportant factor in proving this result is the diminished waste from the dining-rooms. As carefully measured it is now about one-half the amount for 780 patients that it formerly was for about 600.

The separation and night supervision of the unclean, in the infirmary wards, has also proven quite satisfactory, the amount of uncleanliness being greatly reduced and the comfort of all classes correspondingly increased.

There has been no mechanical restraint during the year, except the confinement of one hand of a demented patient by a suit made of common rubber sheeting to prevent her from picking at the dressing placed upon the other arm for a collar fracture.

The seclusion has been transient in character, averaging 3.63 hours per instance, and 3.96 hours per day for the daily average of 780 patients.

All the other means, both medical and hygienic, as well as moral, which we have made use of in former years, have been continued during that last past. A table accompanies this report, which shows the average daily amount of outdoor exercise, employment, narcotics, etc.

On the 1st day of November of this year, with 771 patients in the institution, there were 217 who were given the privilege of parole; 120 of these were in unlocked wards, the doors being open from 6 A. M. till 8:30 P. M. Nearly all the occupants of these wards are permitted to go about the grounds at pleasure, but in a number of instances the attendants are expected to have a constant knowledge of the whereabouts of the patient, and in a few cases among the younger females, they are only permitted to leave the ward in company with another trusty patient. No watch, however, is placed over the door, and the only means taken to enforce the requirement is the promise of the patient. Should a violation of the promise occur a curtailment of privileges is the result.

Among those granted parole privileges from closed wards great variation exists in the extent of liberty allowed. All, however, are allowed outside of the wards for longer or shorter periods unaccompanied by attendants. Every ablebodied patient, to whom this privilege is granted, is expected to have some employment of a useful kind that will occupy a certain portion of his time.

I do not look upon unlocked doors, simply of themselves, as features of much consequence. They are simply a convenience, though the extent to which they are used necessarily interferes somewhat with the classification of acute cases on first admission.

Of 20 wards four are unlocked simply to prevent so much locking and unlocking of doors in granting parole privileges to so large a number.

We have found this grant of personal freedom, under more or less restriction, useful in many cases of convalescence, by enabling the patient to accustom himself to the conditions of the social life of his home, while still under the care of the institution and thus diminishing the danger of relapse. In other words, it is a kind of convalescent home, the best we can offer them under the present arrangements for the care of the insane in this State.

The changes among the force of employes during the year have been unusually infrequent. With 132 on the pay-rolls of the institution there were but 21 changes from all causes. The lapse of time has enabled us to establish a permanency and secure an experience that is highly gratifying to all who can appreciate the value of these features in the care of the insane. It requires from six months to one year for an attendant to get such a knowledge of his duties as will enable him to render efficient service. With 59 day and night attendants there were but nine changes. Taking into consideration sickness and all other causes, this is a gratifying condition 36 of the 59 attendants have

been in service for three years or more. Of the 132 employes at the close of the year, 109 had been with us for more than one year.

I desire to call your attention to the urgent necessity that exists for amendment of the laws regulating the admission, care and discharge of the insane, with the hope that you may be able to secure some legislation on the subject.

To begin with, every insane person in the State, whether in State asylum, private sanitarium, county infirmary or private family, should be under efficient State supervision. Strange that it should be true, it is nevertheless a fact that relatives and friends are not always safe custodians of the insane. Within the past few days one instance has come under my notice where a daughter had been confined for twelve years or more, by a mother, in a basement room necessarily with defective light and ventilation, and another mother writes us, after we had received her daughter, that she had found it necessary at home to put a strap about her daughter's waist to which she confined her hands, and had also found it a necessity, on some occasions, to tie her feet together. This person, too, had been extremely hypercritical of her daughter's treatment by asylum authorities previously.

There is also an indefiniteness and uncertainty regarding the discharge of patients from asylums and the financial responsibility of friends, that should be corrected.

Of the various improvements effected in the different departments of the institution, you already have intimate knowledge.

The extraordinary wants of the institution for the coming year are not numerous and will not require large appropriations.

The amount usually given for ordinary repairs (\$5,000) has proven insufficient for several years past, and should be increased to \$6,000. The repairs are becoming every year more expensive as the institution becomes older.

A large number of the bedsteads are in very dilapidated condition. Several patients now sleep on the floor, and the number is constantly increasing. For this reason, an appropriation for furniture large enough to cover the cost of 200 bedsteads should be made; say, \$2,000.

The necessity for better protection from fire by the purchase of a fire pump, hydrants, pipe, etc., is great, and should be urged upon the attention of the legislature. The sum of \$3,100 will be required for this purpose.

Machinery for the carpenter shop and engineer shop, consisting of planes, saw, mortising machine and lathe, would prove very economical and convenient, and diminish considerably the cost of lumber and other material necessary in keeping up the repairs of the institution.

The sum of \$500 will be necessary for this purpose, and its appropriation should be earnestly requested.

The bath-tubs at present in use in the institution are unsightly and very dangerous. Their use requires the utmost care, and in spite of this a scald to a patient now and then occurs. With the lesson before us, within the past year or two, of two or three deaths from this cause in asylums for the insane, it behooves us to use every precaution against such an occurrence here. The sum of \$1,000 will enable us to supply the institution with bath-tubs of such an improved design that injury to patients from scalding would be rendered almost impossible.

There is so much painting about the institution that is urgently needed, that the appropriation for that purpose should be increased to \$2,000. The inside wood-work in many of the wards is suffering for the want of paint, and it will be false economy not to give us the necessary amount to put it in proper condition.

I trust, also, that the legislature may be made to see the urgent necessity for a veranda, that will at the same time serve as a fire-escape for the upper floors of the administration building. Should a fire now occur in the only stairway leading to that portion of the building, there would be no means of egress left.

To each member of the official staff associated with me in the discharge of responsible duties, I desire to express my sincere thanks for the interest which each one has manifested in the welfare of the institution, and for the readiness shown in responding to any request made of them by myself.

To the employes, also, I am greatly indebted for the faithfulness which, almost without exception, they have shown in the execution of their delicate and varied duties. The success of such an institution depends chiefly on the harmony and faithfulness of the subordinates, and without these elements failure is inevitable. The Athens Asylum for the Insane owes its present position largely to the excellent character of its employes. I take pleasure in extending to them my gratitude for their valuable assistance in every effort we have made for the advancement of the institution's interests.

For yourselves, gentlemen, I wish to return my heartfelt thanks for your uniform courtesy and the cordial support you have extended to me during the year.

A. B. RICHARDSON, *Superintendent.*

ATHENS, OHIO, *November 17, 1887.*

TABLE SHOWING AVERAGE DAILY NUMBER OF PATIENTS EMPLOYED AND EXERCISING OUT DOORS, WITH NUMBER OF INSTANCES OF SECLUSION, NUMBER OF SLEEPING DRAUGHTS ADMINISTERED, NUMBER WHO ASSIST AT WARD-WORK AND EXTENT OF PAROLE ALLOWED FOR THE YEAR ENDING OCTOBER 31, 1887.

Date.	Average daily number instances of seclusion.			Average daily number taking sleeping draughts.			Average daily number having privilege of parole.			Average daily number taking outdoor exercise.			Average daily number doing outside work.			Average daily number who assist at ward work.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
1886—November....	0	.97	.97	.003	.013	.016	91	110	201	86	112	138	107	101	208	93	118	211
December....	.01	.04	.05	.01	.02	.03	86	110	196	55	86	141	105	94	199	91	111	202
1887—January.....	.04	.06	.10	.02	.05	.07	91	112	203	11	39	50	114	86	200	91	112	203
February.....	.02	.03	.05	.02	.06	.08	96	116	212	71	68	139	115	100	215	94	117	211
March .....	.04	.07	.11	.02	.07	.09	96	124	220	154	143	297	120	105	225	91	111	202
April.....	.04	1.40	1.44	.01	.06	.07	94	124	218	183	174	357	122	95	217	90	123	213
May .....	.09	1.00	1.09	.01	.10	.11	92	127	219	224	203	427	123	95	218	89	107	196
June	1.30	1.10	2.40	.01	2.80	2.81	95	119	214	208	193	401	127	103	230	89	106	195
July .....	.02	.05	.07	.01	4.00	4.01	96	115	211	236	243	479	121	108	228	87	103	190
August .....	.03	.04	.07	.02	.11	.13	94	110	204	230	247	477	125	104	229	91	103	194
September ...	.01	.04	.05	.03	.07	.10	101	112	213	225	198	423	123	108	231	87	102	189
October .....	.003	1.00	1.03	.05	.07	.12	103	119	222	200	204	404	120	104	224	88	103	191

TABLE III.—SHOWING THE ADMISSIONS, RE-ADMISSIONS, DISCHARGES AND DEATHS FROM OPENING OF ASYLUM TO NOVEMBER 15, 1887.

	Males.	Females.	Total.
Persons admitted	1,730	1,597	3,327
Re-admissions	271	259	530
Total cases admitted	2,001	1,856	3,857
	Males.	Females.	Total.
Discharged cases—			
Recovered	738	648	1,386
Relieved	128	154	282
Unimproved	369	396	765
Not insane	1	1	2
Died	373	271	644
Total discharged and died	1,609	1,470	3,079
Remaining November 15, 1887	392	386	778
Average number resident 14 years	294	322	616
Transferred from other asylums	129	151	280
Transferred to other asylums	108	115	223

TABLE IV.—SHOWING ADMISSIONS AND RECOVERIES OF PERSONS FROM OPENING OF ASYLUM TO NOVEMBER 15, 1887.

	Males.	Females.	Total.
Persons admitted during 14 years	1,730	1,597	3,327
Persons discharged recovered	655	569	1,224
Of whom were admitted relapsed	152	148	300
Recovered persons who have not relapsed	503	421	924
Relapsed persons discharged recovered	57	59	116
Net recovered persons	560	492	1,052

TABLE V.—SHOWING ADMISSIONS, DISCHARGES AND DEATHS, WITH MEAN ANNUAL MORTALITY, PROPORTION OF RECOVERIES, THOSE REMAINING AT CLOSE OF EACH YEAR, AND AVERAGE NUMBER RESIDENT EACH YEAR.

Year.	Admitted.			Discharged.									Died.		
				Recovered.			Relieved.			Unimproved.					
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
1874...	344	364	708	38	35	73	4	9	13	5	3	8	14	9	23
1875...	133	119	252	53	39	92	8	16	24	32	31	63	26	20	46
1876...	129	112	241	54	44	98	14	7	21	11	16	27	32	22	54
1877...	152	145	297	66	59	125	4	7	11	110	118	228	30	13	43
1878...	99	113	212	47	50	97	8	8	16	20	17	37	20	17	37
1879...	119	83	202	77	52	129	4	4	8	14	11	25	26	17	43
1880...	132	108	240	63	45	108	.....	2	2	11	9	20	26	22	48
1881...	110	89	199	50	44	94	8	9	17	26	23	49	36	19	55
1882...	110	106	216	51	42	93	8	5	13	18	47	65	17	19	37
1883 ..	109	107	216	53	45	98	7	10	17	12	36	48	24	19	43
1884...	119	104	223	42	54	96	4	18	22	37	32	69	35	28	63
1885...	134	121	255	52	34	86	22	17	39	40	19	59	15	16	31
1886....	185	180	365	49	53	102	17	22	39	21	43	64	35	20	55
1887.....	126	105	231	43	52	95	20	20	40	12	10	22	37	30	67
Total..	2,001	1,856	3,857	738	648	1,386	128	164	292	369	415	784	373	271	644

TABLE V.—Concluded.

Year.	Remaining November 15, of each year.			Average number resident.			Percentage of recoveries on admissions.			Percentage of deaths on the average No. resident.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
1874.....	283	308	591	199	226	425	11.04	9.61	10.32	7.30	3.98	5.45
1875.....	297	321	618	283	314	597	39.84	32.77	36.50	9.18	6.36	7.71
1876	315	344	659	308	338	646	41.80	39.28	40.66	10.38	6.51	8.19
1877.....	257	292	549	319	343	662	43.42	40.70	42.08	9.40	3.69	6.50
1878	261	313	574	261	310	571	47.48	44.25	45.86	7.66	5.48	6.57
1879.....	259	212	571	261	299	560	64.71	62.65	63.68	9.96	5.69	7.82
1880	291	342	633	276	319	595	47.73	41.66	44.69	9.78	6.89	8.33
1881	281	325	606	276	331	607	45.45	50.00	47.72	13.04	5.74	9.39
1882.....	297	328	625	286	325	611	46.26	39.62	42.94	5.94	5.84	5.89
1883	310	325	635	302	324	626	48.66	42.05	45.35	7.91	5.86	6.88
1884.....	311	297	608	312	313	625	35.37	51.92	43.64	11.21	8.94	10.07
1885.....	316	332	648	315	315	630	38.88	28.33	33.60	4.76	5.08	4.92
1886.....	378	393	771	329	343	672	26.48	29.44	28.46	10.63	5.82	8.22
1887	392	386	778	393	387	780	34.40	49.57	41.98	9.39	7.73	8.56

TABLE VI.—SHOWING THE HISTORY OF THE ANNUAL ADMISSIONS SINCE OPENING OF THE ASYLUM, INCLUDING DISCHARGES AND DEATHS, AND REMAINING OF EACH YEAR'S ADMISSIONS ON NOVEMBER 15, 1887.

Year.	Admitted.					Of each year's admissions, discharged and died in 1887.											
	New cases		Relaps'd cases.		Total.	Recovered.			Relieved.			Unimpr'd.			Died.		
	M.	F.	M.	F.		M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
1874..	344	364	.....	.....	708	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	2	3
1875..	125	117	8	2	252	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
1876..	120	107	9	5	241	.....	.....	.....	.....	.....	.....	1	1	2	.....	.....	.....
1877..	142	132	10	13	297	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	2
1878..	92	105	7	8	212	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
1879..	106	67	13	16	202	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1880..	121	91	11	17	240	.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....
1881..	86	69	24	20	199	.....	.....	.....	1	.....	1	1	.....	1	1	2	3
1882..	88	84	22	22	216	.....	1	1	.....	.....	.....	1	1	2	2	2	4
1883..	84	92	25	15	216	.....	.....	.....	1	1	2	.....	.....	.....	1	2	3
1884..	106	84	13	20	223	.....	1	1	1	.....	1	.....	.....	.....	4	2	6
1885..	105	99	29	22	255	1	8	9	5	2	7	.....	.....	.....	4	1	5
1886..	116	105	69	75	365	16	26	42	6	10	16	8	7	15	4	10	14
1887..	95	80	31	25	231	26	16	42	6	6	12	1	1	2	16	9	25
Total	1730	1597	271	259	3857	43	52	95	20	20	40	12	10	22	37	30	67

TABLE VI.—Concluded.

Year.	Total discharged and died of each year's admissions since opening of Asylum.												Remaining of each year's admissions Nov. 15, 1887.		
	Recovered.			Relieved.			Unimproved.			Died.					
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
1874...	91	73	164	16	29	45	142	166	308	72	66	138	22	30	52
1875...	51	45	96	10	8	18	31	39	70	37	18	55	4	9	13
1876...	49	51	100	12	7	19	36	28	64	29	19	48	3	7	10
1877...	64	54	118	6	9	15	30	55	85	34	14	48	10	13	23
1878...	42	53	95	3	7	10	30	17	47	19	22	41	11	14	25
1879...	70	36	106	2	4	6	17	10	27	17	14	31	11	19	30
1880....	58	45	103	7	9	16	17	15	32	29	20	49	23	19	42
1881...	43	34	77	8	6	14	14	11	25	26	21	47	20	17	37
1882....	54	49	103	6	12	18	10	20	30	20	11	31	20	14	34
1883....	54	58	112	9	8	17	13	8	21	12	10	22	23	23	46
1884...	42	43	85	14	13	27	13	6	19	24	21	45	26	21	47
1885....	37	46	83	20	18	38	5	6	11	20	9	29	36	42	78
1886....	37	43	80	9	16	25	10	13	23	18	16	34	106	92	198
1887....	26	21	47	6	6	12	1	2	3	16	10	26	76	66	142
Total..	718	651	1369	128	152	280	369	396	765	373	271	644	392	386	778

TABLE VIII.—SHOWING LENGTH OF RESIDENCE IN THOSE DISCHARGED RECOVERED, AND IN THOSE WHO DIED DURING THE YEAR ENDING NOVEMBER 15, 1887.

Length of residence.	Recovered.			Died.		
	Males.	Females.	Totals.	Males.	Females.	Totals.
Under one month	5	1	6	7	5	12
From 1 to 3 months.....	11	9	20	7	3	10
“ 3 to 6 “	15	15	30	2	5	7
“ 6 to 9 “	5	8	13	2	3	5
“ 9 to 12 “	2	5	7	1	1	2
“ 1 to 2 years.....	5	11	16	4	3	7
“ 2 to 3 “ .....	.....	1	1	3	2	5
“ 3 to 5 “ .....	.....	2	2	3	3	6
“ 5 to 7 “ .....	.....	.....	.....	2	3	5
“ 7 to 9 “ .....	.....	.....	.....	1	.....	1
“ 9 to 11 “ .....	.....	.....	.....	3	.....	3
“ 11 to 13 “ .....	.....	.....	.....	1	1	2
For 14 years.....	.....	.....	.....	1	1	2
Totals.....	43	52	95	37	30	

TABLE IX.—SHOWING DURATION ON ADMISSION IN ADMITTED, RECOVERED AND DIED, DURING YEAR ENDING NOVEMBER 15, 1887.

Duration on admission in five classes.										
Classes.	Admitted.			Discharged.			Died.			
				Recovered.		Otherwise removed.				
				Males.	Females.					
	Males.	Females.	Totals.	Males.	Females.	Totals.	Males.	Females.	Totals.	
First Class—										
First attack under one month.....	17	18	35	9	12	21	1	2	3	5
Second Class—										
First attack under twelve months.....	34	37	71	15	22	37	11	9	20	23
Third Class—										
Not first attack under twelve months.....	28	23	51	12	9	21	7	6	13	11
Fourth Class—										
First attack or not over twelve months.....	43	14	57	7	4	11	13	11	24	25
Fifth Class—										
Congenital .....	.....	3	3	.....	.....	.....	.....	.....	.....	.....
Unknown	4	10	14	.....	5	5	.....	2	2	3
Totals.....	126	105	231	43	52	95	32	30	62	67

TABLE X.—SHOWING AGES OF ADMITTED, RECOVERED, DIED AND REMAINING IN YEAR 1887.

Ages.	Admitted.			Recovered.			Died.			Remaining Nov. 15, 1887.		
	Males.	Females.	Totals.	Males.	Females.	Totals.	Males.	Females.	Totals.	Males.	Females.	Totals.
Under 15 years.....				1		1						
From 15 to 20 years.....	6	9	15	1	4	5		1	1	9	6	15
“ 20 to 25 “.....	17	14	31	8	13	21	1	2	3	23	22	45
“ 25 to 30 “.....	14	12	26	4	9	13	1	1	2	40	32	72
“ 30 to 35 “.....	14	10	24	7	5	12	2	...	2	41	51	92
“ 35 to 40 “.....	13	24	37	4	10	14	2	6	8	65	49	114
“ 40 to 45 “.....	13	7	20	4	1	5	4	2	6	48	33	81
“ 45 to 50 “.....	14	6	20	5	1	6	3	4	7	42	36	78
“ 50 to 55 “.....	10	8	18	3	2	5	3	3	6	36	36	72
“ 55 to 60 “.....	5	6	11	3	2	5	3	2	5	36	24	60
“ 60 to 65 “.....	4	6	10	2	3	5	2	3	5	25	23	48
“ 65 to 70 “.....	4	1	5	1	2	3	7	3	10	12	14	26
“ 70 to 75 “.....	8		8				8	1	9	5	7	12
“ 75 to 80 “.....	1		1					1	1	4	3	7
“ 80 to 85 “.....	1		1				1		1	1	2	3
“ 85 to 90 “.....												
Over 90 years.....											1	1
Unknown	2	2	4					1	1	5	47	52
Totals	126	105	231	43	52	95	37	30	67	392	386	778

TABLE XI.—SHOWING CONDITION AS TO MARRIAGE IN ADMISSIONS, RECOVERIES AND DEATHS DURING THE YEAR ENDING NOVEMBER 15, 1887.

	Admitted.			Recovered.			Died.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
Single	55	40	95	21	25	46	6	5	11
Married	61	52	113	21	21	42	25	15	40
Widowed.....	7	10	17		6	6	5	8	13
Divorced	3	1	4				1	1	2
Unknown		2	2	1		1		1	1
Totals	126	105	231	43	52	95	37	30	67

TABLE XII.—SHOWING PROBABLE CAUSE OF INSANITY IN PATIENTS ADMITTED DURING YEAR ENDING NOVEMBER 15, 1887.

Number of instances in which each cause was assigned.											
Cause of Insanity.	As predisposing causes.			As exciting causes.			As predisposing, exciting, or uncertain.			Total.	
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.
Moral—											
Domestic trouble.....	.....	.....	.....	5	19	24	.....	3	3	5	22
Financial difficulty.....	.....	.....	.....	6	3	9	.....	.....	.....	6	3
Anxiety and worry.....	2	.....	2	4	.....	7	.....	.....	.....	9	.....
Religious excitement	1	.....	1	6	4	10	.....	1	1	7	5
Love affairs.....	.....	.....	.....	1	1	2	1	.....	1	2	1
Fright and nervous shock .....	.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....
Grief .....	.....	.....	.....	3	2	5	.....	.....	.....	3	2
Seduction.....	.....	.....	.....	.....	1	1	.....	.....	.....	.....	1
Physical—											
Intemperance in drink	5	.....	5	14	1	15	.....	.....	.....	19	1
Veneral disease.....	.....	.....	.....	.....	1	1	.....	.....	.....	.....	1
Prostitution.....	.....	.....	.....	.....	1	1	.....	.....	.....	.....	1
Self-abuse, sexual	3	.....	3	6	.....	6	.....	.....	.....	.....	9
Overexertion	3	1	4	3	.....	3	.....	.....	.....	6	1
Epilepsy.....	10	1	11	2	1	3	.....	.....	.....	12	.....
Sun-stroke .....	.....	.....	.....	4	.....	4	.....	.....	.....	4	.....
Accident or injury	4	.....	4	6	1	7	1	.....	1	11	1
Nostalgia ..	.....	.....	.....	1	.....	1	.....	.....	.....	1	.....
Single life.....	.....	.....	.....	1	.....	1	.....	.....	.....	1	.....
Pregnancy .....	.....	.....	.....	.....	1	1	.....	1	1	1	1

[illegible]

TABLE XIII.—SHOWING FORM OF DISEASE IN ADMISSIONS, RECOVERIES AND DEATHS FOR 1887, AND REMAINING NOVEMBER 15, 1887.

Form of mental disorder.	Admissions.			Recoveries.			Deaths.			Remaining.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
Congenital—												
(a) with epilepsy	2	.....	2	.....	.....	.....	1	.....	1	.....	.....	.....
(b) without epilepsy.....	1	2	3	.....	.....	.....	.....	.....	.....	4	7	11
Epilepsy acquired.....	8	3	11	.....	.....	.....	.....	2	2	19	10	29
General paralysis	6	.....	6	.....	.....	.....	7	2	9	16	.....	16
Mania—												
Acute	27	22	49	18	22	40	1	2	3	17	15	32
Chronic	13	6	19	.....	1	1	1	6	7	124	143	267
Apotu	2	.....	2	2	.....	2	.....	.....	.....	.....	.....	.....
Melancholia—												
Acute	30	50	80	17	22	39	2	9	11	20	32	52
Chronic	4	7	11	.....	2	2	4	3	7	73	90	163
Dementia—												
Primary	14	9	23	6	5	11	4	1	5	8	7	15
Secondary	11	5	16	.....	.....	.....	7	5	12	104	80	184
Senile	8	1	9	.....	.....	.....	10	.....	10	7	2	9
Totals	126	105	231	43	52	95	37	30	67	392	386	778

TABLE XIV.—SHOWING OCCUPATION OF MALE PATIENTS ADMITTED DURING YEAR
ENDING NOVEMBER 15, 1887.

Occupation.	No.	Occupation.	No.
Farmers.....	59	Druggists.....	1
Laborers.....	9	Painters.....	2
Miners	10	Bakers	1
Carpenters	1	Section bosses	2
Coopers	1	Hucksters.....	1
Physicians.....	2	Millers.....	1
Teachers.....	4	Firemen	1
Students.....	2	Surveyors	1
Printers	1	Chain makers	1
Saloon-keepers.....	3	Hostlers.....	1
Saddlers ..	1	Contractors.....	4
Merchants.....	3	Unknown ..	13
Blacksmiths	1	Total.....	126

STEWARD'S ANNUAL REPORT.

A. B. Richardson, M. D., Superintendent.

DEAR SIR: Herewith please find the fourteenth annual report of the financial department of this institution for the fiscal year ending November 15, 1887.

Very respectfully,

R. E. HAMBLIN, *Steward.*

STATEMENT OF APPROPRIATIONS SHOWING BALANCES ON HAND NOVEMBER 15, 1886, AMOUNTS RECEIVED FROM STATE TREASURY AND ALL OTHER SOURCES, AND AMOUNTS DISBURSED DURING FISCAL YEAR BY FINANCIAL OFFICER, AND BALANCE ON HAND AT THE CLOSE OF YEAR ENDING NOVEMBER 15, 1887.

Names of Appropriations.	Balance on hand Nov. 15, 1886.	Received from State Treasury.	Received from counties.	Received from sales and discounts.	Total to be accounted for.	Amount disbursed during fiscal year.	Balance on hand Nov. 15, 1887.
Current expenses.....	\$71 85	\$105,759 37	\$6,789 75	\$3,533 65	\$116,154 62	\$116,059 14	\$95 48
Salaries of officers	5,562 47	.....	.....	5,562 47	5,562 47	.....
Ordinary repairs.....	6,281 44	.....	.....	6,281 44	6,281 44	.....
Carpets and furniture.....	1,080 22	.....	.....	1,080 22	1,080 22	.....
Fencing	22 36	.....	.....	22 36	22 36	.....
Grading	425 98	.....	.....	425 98	425 98	.....
Books and pictures.....	232 42	.....	.....	232 42	232 42	.....
Expense of Trustees	182 70	.....	.....	182 70	182 70	.....
Painting	974 25	.....	.....	974 28	974 28	.....
Furniture for dining rooms and dormitories	42 08	.....	.....	42 08	42 08	.....
Two tubular boilers.....	925 60	.....	.....	925 60	925 60	.....
Slaughter house, pig pens and sheds for cattle	896 04	.....	.....	896 04	896 04	.....
Window screens for new buildings	367 00	.....	.....	367 00	367 00	.....
Mangle for laundry	525 00	.....	.....	525 00	525 00	.....
For brick smoke-stack and sheet iron work	1,300 00	.....	.....	1,300 00	1,300 00	.....
Repairing water closets.....	657 01	.....	.....	651 01	657 01	.....
Fire-escapes for infirmary wards..	350 00	.....	.....	350 00	350 00	.....
Totals	\$71 85	\$125,583 97	\$6,789 75	\$3,533 65	\$135,979 22	\$135,883 74	\$95 48

STATEMENT SHOWING THE CONDITION OF THE VARIOUS APPROPRIATIONS WITH THE STATE TREASURY FOR THE YEAR ENDING NOVEMBER 15, 1887.

Names of appropriations.	Balance in State Treasury November 15, 1886.	Appropriations made during the year ending November 15, 1887.	Total amount subject to draft during fiscal year.	Amount drawn from the State Treasury for the fiscal year ending November 15, 1887.		Balance in State Treasury November 15, 1887.
Current expenses.....	\$36,671 22	\$115,000 00	\$153,671 22	\$105,759 37	\$47,911 85	
Salaries of officers.....	1,760 66	5,800 00	7,560 66	5,562 47	1,998 19	
Ordinary repairs.....	434 94	5,000 00	5,434 94	5,215 03	219 91	
Ordinary repairs deficiency.....		1,066 41	1,066 41	1,066 41		
Carpets and furniture.....	80 22	1,000 00	1,080 22	1,080 22		
Fencing.....	22 36		22 36	22 36		
Grading.....	425 98		425 98	425 98		
Books and pictures.....	84 30	150 00	234 30	232 42	1 88	
Expenses of Trustees.....	259 67	200 00	459 67	182 70	276 97	
Painting.....	105 46	1,000 00	1,105 46	974 28	131 18	
Furniture for dining-rooms and dormitories.....	42 08		42 08	42 08		
Two tubular boilers.....	925 60		925 60	925 60		
Slaughter-house, pig-pens and sheds for cattle.....		1,000 00	1,000 00	896 04	103 96	
Repairing plastering and cementing basement.....		500 00	500 00		500 00	
Window screens for new buildings.....		800 00	800 00	367 00	433 00	
Mangle for laundry.....		525 00	525 00	525 00		
Range for kitchen.....		1,000 00	1,000 00		1,000 00	
For brick smoke-stack.....		350 00	350 00	350 00		
Fire-escapes for infirmary wards and sheet iron work.....		1,300 00	1,300 00	1,300 00		
Repairing water-closets.....		1,000 00	1,000 00	657 01	342 99	
Totals.....	\$42,812 49	\$135,691 41	\$178,503 90	\$125,583 97	\$52,919 93	

BALANCE SHEET NOVEMBER 15, 1887.

On what account.	Amount.
Amusements	\$681 08.
Advertising	19 80
Butter and eggs..	6,812 59
Boots, shoes and slippers.....	1,053 55
Blankets and spreads.....	1,355 54
Blacksmithing	78 44
Brooms and brushes.....	430 10
Blank books and stationery.....	274 82
Cider and vinegar.....	128 46.
Chaplain services.....	184 00
Canned goods.....	210 25
Coal	6,770 54
Clothing	3,268 01
Confectioneries.....	103 15
Drayage and freights.....	734 72
Dry goods and notions.....	2,629 94
Engineers' supplies.....	29 90
Fat cattle and sheep.....	14,535 94
Flour and meal.....	4,230 68.
Forage..	983 31
Fruits	2,010 10
Fish and oysters	1,169 42
Gas and fixtures.....	4,201 34
Groceries	13,482 89.
Hosiery	224 35
Hardware	482 80
Harness.....	30 34
Liquors	361 81
Lumber	140 00
Milk	5,168 56.
Medicines	685 72
Miscellaneous	1,188 08
Meats.....	1,730 80
Oils	51 34
Papers and exchanges.....	164 18
Patients' expenses.....	159 70
Postage and envelopes.....	142 55
Poultry and game.....	550 22
Repairs	332 67
Spices.....	93 07
Seeds and plants.....	84 62
Stock	165 00
Telegrams and telephones.....	100 76.
Traveling expenses.....	69 80
Vegetables.....	3,389 42
Wood and willow-ware..	42 60
Painters' supplies.....	37 25
Tinners' supplies.....	47 27
Upholsterers' supplies	33 72
Wages—male.....	21,198 94
“ female.....	13,215 00
Total.....	\$116,059 14

CURRENT EXPENSE, ITEMIZED.

On what account.	Amount.	Total.
Amusements—		
Admission to shows	\$100 20	
Billiard table, 1.....	175 00	
Billard cues, chalk, etc.....	3 45	
Cards, playing, 7 doz.....	3 65	
Fireworks.....	64 80	
Musicians' services.....	276 00	
Music supplies.....	18 08	
Tennis, rackets and croquet sets.....	18 40	
Theatrical plays and properties.....	21 50	
		\$681 08
Advertising—		
Notice to boiler makers	\$5 55	
Notice to coal dealers	14 25	
		19 80
Butter and eggs—		
Butter, 32,388 $\frac{1}{2}$ pounds	\$5,759 22	
Butterine, 1,442 “	240 74	
Eggs, 6,750 $\frac{3}{4}$ doz	812 63	
		6,812 59
Boots, shoes and slippers—		
Men's boots, 30 pairs.....	\$80 60	
“ shoes, 310 “	466 60	
“ slippers, 60 “	57 60	
Women's shoes, 319 pairs	448 75	
		1,053 55
Blankets and spreads—		
Blankets, 1,771 pounds.....	\$1,253 25	
Spreads, 117	102 29	
		1,355 54
Blacksmithing—		
Blacksmithing.....		78 44
Brooms and brushes—		
Brooms, 128 doz	\$278 95	
“ whisk, 5 $\frac{1}{2}$ doz.....	14 09	
Brushes, cloth, 3 $\frac{5}{8}$ “	13 56	
“ dusting, 5 $\frac{1}{2}$ doz.....	28 44	
“ hair, 2 $\frac{1}{2}$ “	14 68	
“ horse, 2 “	7 30	
“ scrub, 42 “	43 00	
“ shaving, 1 $\frac{1}{2}$ “	2 70	
“ shoe, 5 “	17 95	
“ wall, $\frac{1}{2}$ “	9 43	
		430 10
Blank books and stationery—		
Blank books, 71.....	\$62 34	
“ day reports, 5,000.....	11 25	
“ letter heads, 6,000.....	32 50	
“ orders, 3,000	4 50	
“ prescriptions, 5,000	8 50	
“ wash lists, 2,000	14 00	
Envelopes, plain, 500.....	80	
“ tie 150	7 50	
Fasteners, 400	1 30	
Ink, Arnold's, 20 quarts.....	9 70	
“ carmine, 5 bottles.....	2 39	
“ indelible, 1 gross	21 50	
“ stands, 2	1 30	

CURRENT EXPENSE, ITEMIZED—Continued.

On what account.	Amount.	Total.
Blank books and stationery—Continued.		
Pads, pencil, 27 doz.....	\$31 80	
Pencils, lead, $4\frac{1}{3}$ gross	16 10	
Pens, 34 gross	19 27	
“ ruling, 1.....	75	
“ holders, 4 doz	3 45	
Paper, note, 17 reams	16 65	
“ journal, $1\frac{1}{5}$ “	8 50	
“ blotting, 12 sheets.....	72	
		\$274 82
Cider and vinegar—		
Cider, 6 barrels	\$27 85	
Vinegar, 796 gallons	100 61	
		128 46
Chaplain services—		
Rev. I. W. Monfort	\$68 00	
Rev. A. B. Riker.....	116 00	
		184 00
Canned goods—		
Apricots, 2 doz	\$5 00	
Blue berries, 2 doz	2 00	
Corn, 88 doz	117 40	
Pears, 7 “	16 00	
Peaches, 10 doz.....	20 00	
Peas, 34 “	48 20	
Plums, $\frac{3}{4}$ “	1 65	
		210 25
Coal—		
Lump coal, $4,259\frac{965}{2000}$ tons	\$5,806 28	
Nut coal, $997\frac{650}{2000}$ tons.....	939 26	
Charcoal, 50 bbls.....	25 00	
		6,770 54
Clothing—		
Coats, 21	\$31 25	
Overcoat, 1	6 75	
Vests, 5	2 50	
Pants, 105 prs.....	159 75	
Suits, 324.....	2,731 20	
Coats and vests, 42.....	114 41	
Cap, 1.....	30	
Hats, wool, 52 ..	53 25	
Hats, straw, 72.....	27 50	
Gloves, 4 doz	34 00	
Underwear, $25\frac{1}{6}$ doz.....	104 85	
Shirts	2 25	
		3,268 01
Confectionery—		
Almonds, $64\frac{3}{4}$ lbs.....	\$12 73	
Citron, 26 lbs.....	5 85	
Bananas, 19 doz....	3 55	
Candy, 618 lbs	59 30	
Figs, $48\frac{1}{2}$ lbs	6 28	
Grapes, 10 lbs.....	1 55	
Walnuts, English, 81 lbs.....	13 89	
		103 15
Drayage and freights—		
Drayage, boxes, etc	\$33 00	
Expressage	152 60	
Freights.....	549 12	
		734 72

CURRENT EXPENSE, ITEMIZED—Continued.

On what account.	Amount.	Total.
Dry goods and notions—		
Arlington suiting, 57 yards	\$6 56	
Buttons, 219 $\frac{1}{4}$ gross.....	44 31	
Braid, 1 bolt.....	05	
Binding carpet, 2 doz	3 50	
Batting, 500 lbs. and 16 sheets.....	50 35	
Buckles, pants, 2 gross	25	
Collars, paper, 2,500.....	25 00	
“ linen, 18 doz ...	14 96	
Combs, 47 doz	38 45	
Corsets, 6 $\frac{1}{2}$ doz.....	32 63	
“ laces, 2 gross.....	1 30	
Collar buttons, 4 gross.....	3 00	
Crash, 1,734 $\frac{1}{2}$ yards.....	155 43	
Chevoits, 1,916 $\frac{3}{4}$ yards.....	170 33	
Carpet felt, 100 lbs	2 75	
Comforts, 1 $\frac{5}{12}$ doz.....	3 00	
Carpet warp, 150 lbs	29 70	
Flannel, 808 $\frac{3}{4}$ yards	144 23	
“ Canton, 1,198 yards.....	101 97	
Ginghams, 1,645 $\frac{3}{4}$ yards	118 48	
Hair pins, 2 bundles	1 50	
Handkerchiefs, 39 doz	23 01	
Holland, 405 $\frac{1}{4}$ yards.....	35 52	
Jeans, 44 yards	13 20	
Knitting cotton, 64 lbs.....	26 04	
Lawns, 442 $\frac{1}{4}$ yards	37 72	
Muslin, brown, 5,459 $\frac{3}{4}$ yards	397 35	
“ bleached, 1,530 $\frac{3}{4}$ yards.....	130 86	
Netting, 203 yards	14 81	
Needles, crochet, 6 doz.....	95	
“ sewing and machine	12 72	
Napkins, 4 doz	15 00	
Needles, knitting, 2 gross.....	80	
Oil cloth, floor, 100 yards	36 00	
“ table, 3 bolts	8 55	
Pins, 40 packages ..	14 52	
Prints, 6,915 $\frac{3}{4}$ yards	373 07	
Razor straps, $\frac{1}{2}$ doz.....	2 25	
Spectacles, 6 doz	8 10	
Shirt fronts, 34 doz.....	57 75	
Suspenders, 19 doz.....	41 00	
Shoe laces, 69 gross	21 80	
Shawls, 31 $\frac{0}{12}$ doz	23 00	
Silesia, 9 yards.....	1 05	
Thread, linen, 27 $\frac{1}{4}$ doz	21 70	
“ cotton, 212 doz	113 52	
Thimbles, 36 doz.....	6 25	
Tape, 44 doz.....	16 74	
Table covers, 26	25 20	
Tarlatan, 32 $\frac{1}{2}$ yards.....	3 25	
Towels, 4 doz	6 40	
Table linen, 375 $\frac{3}{4}$ yards.....	167 83	
Tidy, cotton, 2 lbs	95	
Yarn, 27 lbs	21 22	
Zephyr, $\frac{3}{4}$ lbs	66	
Ruching, 5 boxes	3 40	
Engineers' supplies—		
Copper rivets, 6 lbs.....	\$1 50	\$2,629 94

CURRENT EXPENSE, ITEMIZED—Continued.

On what account.	Amount.	Total.
Engineers' supplies—Continued.		
Flue broom, 1	\$8 80	
Pipe covering, 30 feet	8 80	
Staking tools and flue scraper, 1 set ..	10 50	
Tee, 4-inch, 1	30	
		\$29 90
Fat cattle and sheep—		
Cattle, 321,732 lbs.....	\$13,173 64	
Sheep, 36,923 lbs.....	1,362 30	
		14,535 94
Flour and meal—		
Flour, 1,000 barrels.....	\$3,937 30	
“ Graham, 17 barrels.....	65 65	
“ Buckwheat, 3,000 lbs.....	56 25	
“ Rye	3 50	
Corn meal, 47 bushels.....	20 95	
Oat “ 2,800 lbs	87 75	
Cerealine, 22 cases.....	59 28	
		4,230 68
Forage—		
Corn, ear, 599 $\frac{13}{8}$ bushels.....	\$242 58	
Hay, 38 $\frac{1455}{2666}$ tons.....	304 40	
Oats, 877 $\frac{13}{2}$ bushels	279 34	
Straw, 53,085 lbs	146 37	
Shorts, 1,382 lbs.....	10 62	
		983 31
Fruits—		
Apples, 1,494 $\frac{1}{2}$ bushels.....	\$831 81	
Blackberries, 842 $\frac{1}{4}$ gallons	177 06	
Cranberries, 2 barrels and 20 quarts.....	18 10	
Cherries, 1 $\frac{1}{4}$ bushels.....	4 00	
Grapes, 3,261 $\frac{1}{2}$ lbs	100 17	
Lemons, 12 boxes and 19 dozen.....	59 70	
Melons, musk, 1,689 lbs.....	22 12	
Melons, water, 23,308 pounds.....	176 90	
Oranges, 6 boxes and 17 doz.....	35 73	
Peaches, 130 bushels	126 87	
Pears, 3 barrels	13 50	
Raspberries, 3,826 quarts.....	325 11	
Strawberries, 1,406 “	119 03	
		2,010 10
Fish and oysters—		
Codfish, 160 pounds.....	\$ 9 20	
Fresh fish, 7,031 pounds.....	486 42	
Mackerel, 9 barrels	126 00	
“ mess, 1 case	7 00	
Oysters, 540 gallons and 104 cans	525 80	
Sardines, 1 case.....	13 00	
Scallops, 2 gallons	2 00	
		1,169 42
Gas and fixtures—		
Gas, 3,681,800 feet.....	\$4,145 36	
Albo carbon lamp, 1	7 63	
Burners, 2 gross	6 00	
Carbon, 10 pounds	75	
Chimneys, 1 doz.....	50	
Globes, 15 $\frac{1}{2}$ “	33 05	
Gas stove, 1	7 00	
Tubing, 6 feet	1 05	
		4,201 34

CURRENT EXPENSE, ITEMIZED—Continued.

On what account.	Amount.	Total.
Groceries—		
Apple butter, 14 gallons.....	\$ 10 49	
Apples, dried, 2,820 pounds	121 05	
“ evaporated, 1,363 pounds.....	154 74	
Apricots, “ 145 “	26 10	
Beans, white, 6,235 “	191 63	
Baking powder, 417 “	155 18	
Bath brick, 29 bars.....	26 10	
Blacking, 28 $\frac{3}{4}$ doz	14 35	
Crackers, 4,296 $\frac{1}{4}$ pounds	222 64	
Cheese, 3,000 “	396 95	
Currants, dried, 170 pounds	11 05	
Corn, “ 745 “	52 15	
Coffee, 21,273 “	3,883 15	
Chilli sauce, 1 boz	3 00	
Cocoanut, des., 15 pounds	3 83	
Chocolate, 15 pounds	5 70	
Ginger snaps, 177 pounds	14 25	
Gelatine, 4 doz	6 50	
Hominy, 4 barrels	11 70	
Honey, 198 $\frac{3}{4}$ pounds	30 15	
Indigo, 16 “	12 40	
Kraut, 6 barrels	20 50	
Ketchup, 2 doz	5 00	
Lye, 2 cases ...	4 50	
Lard, 5,526 pounds	435 90	
Molasses, N. O., 351 $\frac{1}{2}$ gallons.....	134 29	
“ syrup, 1,039 $\frac{1}{2}$ “	294 23	
“ maple, 85 “	71 93	
Matches, safety, 25 cases	25 00	
Pipes, 8 boxes	5 20	
Prunes, 1,585 pounds.....	98 58	
Pickles, 2 barrels	14 00	
Pearline, 1 case.....	3 75	
Rice, 4,950 pounds	288 39	
Raisins, 12 boxes and 240 pounds.....	45 35	
Salt, coarse, 80 pounds	50 75	
“ table, 100 sacks	7 40	
Starch, pearl, 2,304 pounds	72 87	
“ gloss, 192 “	10 56	
“ corn, 440 “	28 60	
Sugar, extra C, 2,289 “	1,178 92	
“ granulated, 33,192 $\frac{1}{2}$ pounds	2,074 28	
“ powered, 1,443 “	102 05	
“ cut loaf, 247 “	16 06	
Soap, Laundry, 165 boxes and 975 pounds.....	465 87	
“ toilet, 12 boxes and 26 dozen	82 60	
“ crystal, 675 pounds.....	45 56	
Soda, caustic, 5,036 “	146 05	
Tobacco, chewing, 1,769 pounds.....	513 78	
“ smoking, 900 “	227 40	
Tea, Y. H., 992 “	383 74	
Tea, Oolong, 471 “	157 53	
Peaches, evap., 732 “	108 70	
“ dried, 3,806 $\frac{1}{2}$ “	313 29	
Queensware, 557 $\frac{1}{4}$ dozen.....	697 15	
		\$13,482 89

CURRENT EXPENSE, ITEMIZED—Continued.

On what account.	Amount.	Total.
Hosiery—		
Men's half hose, 121 $\frac{1}{4}$ dozen	\$119 40	
Women's hose, 76 $\frac{1}{6}$ "	104 95	
		\$224 35
Hardware—		
Butts, 2 dozen	\$2 75	
Bolts, 1 gross	90	
Baskets, wire, 2.....	1 50	
Cuspidors, 5 dozen.....	35 20	
" mats, 4	1 80	
Curry combs, $\frac{1}{2}$ dozen	1 50	
Carvers, 2 dozen pairs.....	42 84	
Casters, 4 sets	1 00	
Castings, iron..	4 12	
Dust pans, 18 dozen.....	32 80	
Dish pans, 4	6 00	
Flesh forks, 6.....	1 33	
Grass edge knife, 1.....	1 65	
Glass, 15 boxes	32 40	
Hooks, C. and H., 3 $\frac{1}{2}$ gross	4 65	
Hoes, scuffle, 2	1 20	
Hatchets	2 25	
Keys, steel, 14	10 50	
Key rings, 6 dozen	3 00	
Knives, 14 $\frac{1}{2}$ "	43 07	
Lanterns, $\frac{1}{12}$ "	6 67	
Locks, 2 $\frac{5}{12}$ "	40 75	
Locks, piano, $\frac{1}{6}$ "	1 00	
Meat pans, $\frac{1}{2}$ "	36 00	
Mops, 1 gross	15 00	
Mouse traps, 3 dozen	1 68	
Nails, 107 pounds.....	4 31	
" brass, 1 box	1 25	
Pot and cover, iron, 1	2 44	
Picture wire, 16 coils	1 44	
Rack pulleys, 3 dozen.. ..	1 50	
Screws, 16 gross..	2 84	
Shutter knobs, $\frac{1}{4}$ dozen	65	
Spoons, table, 6	22 80	
" tea, 6 "	11 46	
Steels, carving, $\frac{1}{6}$ "	1 40	
Shovels, scoop, 1 "	11 65	
Soup ladles, 6 "	37 08	
Sad irons, 325 pounds	10 57	
Shears, 3 dozen	24 00	
Tacks, 80 boxes.....	3 45	
Thermometers, 2 dozen	3 30	
Trays, 1 dozen.....	7 80	
Wrot bar iron, 12 feet	1 50	
Wire, 12 coils.....	1 80	
		482 80
Harness—		
Set, 1	\$30 00	
Bits, 1 pair	34	
		30 34
Liquors—		
Alcohol, 46 galls	\$103 96	
Brandy, 10 galls	11 25	
Beer, 20 $\frac{1}{2}$ dozen quarts	21 75	

CURRENT EXPENSE, ITEMIZED—Continued.

On what account.	Amount.	Total.
Liquors—Continued.		
Wine, port, 33 gallons.....	\$41 20	
“ sherry, 20 gallons.....	36 80	
Whisky, 75 “.....	146 85	
		\$361 81
Lumber—		
Flooring Y. P. 4,000 feet.....		140 00
Milk—		
Milk, 40,181 gallons.....	\$5,138 36	
Buttermilk, 302 gallons.....	30 20	
		5,168 56
Medicines—		
Medicines.....		685 72
Miscellaneous—		
Balance on 2 boats.....	\$5 50	
Belt machine, 1.....	07	
Beeswax, 18½ pounds.....	3 31	
Burial cases, 2.....	20 30	
Bottles, 126.....	10 08	
Bags, paper, 4 bundles.....	4 00	
Buttons and rivets, brass, 2.....	30	
Blankets, rubber, 12.....	12 00	
Crumb brushes and trays, 2.....	3 50	
Cocoa mats, 4.....	3 00	
Cutting view of asylum.....	1 00	
Covers, book, 3 dozen.....	1 50	
Carpet weaving, 318 yards.....	31 80	
Coolers, water, 6.....	21 00	
Collar and cuff ironer and shaper, 1.....	115 00	
Caligraph ribbons, 2.....	1 50	
Clocks, 9.....	36 00	
Colering for carpet.....	1 40	
Carpet sweepers, 3.....	7 50	
Curtain loops and hooks, 4 pairs.....	3 70	
Couplings, 8.....	5 50	
Driver's whip, 1.....	50	
Difference in exchange of batteries.....	25 00	
“ “ sewing machines.....	23 00	
“ “ battery.....	6 50	
Dusters, feather, 1 dozen.....	9 90	
Expenses of piano tuner.....	3 00	
“ driving cattle.....	1 25	
Freight on empty barrels.....	65	
Flower pots, 8,000.....	44 10	
Fruit trees, 214.....	78 00	
Fans, palm, 200.....	1 60	
Hauling carpet.....	1 00	
Hot bed sash, 25.....	25 00	
Hops, 10 pounds.....	4 70	
Hose, 500 feet.....	80 02	
Ladders, step, 2.....	2 15	
Lime, 3 barrels.....	1 80	
Linseed meal, 500 pounds.....	7 50	
Letter press and blotter bath, 1.....	6 00	
Machine for cutting hair, 1.....	7 00	
Moving telephone.....	2 00	
Mangle aprons, 2.....	35 00	

CURRENT EXPENSE, ITEMIZED—Continued.

On what account.	Amount.	Total.
Miscellaneous—Continued.		
Manure, 87 loads.....	\$34 15	
Malt, 16 pounds	80	
Mucilage, 2 bottles	50	
Nozzle and tip, 1.....	50	
Oar locks, 4 pairs	5 00	
Oars, 4 pairs	12 00	
Phoenix batteries, 2	14 00	
Pill machine, 1	2 80	
Preservative, 1 gallon	2 00	
Posts, locust, 5	1 00	
Pine apples, 91.....	11 37	
Pocket cases, 1 dozen	50	
Paper, fly, 1 box	1 00	
Paper, manilla, 41 quires	11 25	
“ tar, 600 square feet	1 60	
“ wrapping, 25 pounds	75	
“ W. C., 5 cases.....	46 50	
Rein holders, 5	2 50	
Reinking, 2; caligraph ribbons	70	
Rubber tubing, 20 feet	2 60	
Rubber bands, 2 gross.....	3 75	
Rosin, 6 pounds	30	
Rubber sheeting, 18½ yards.....	13 75	
Sand for 1886 and 1887	20 00	
String tags, 500	75	
Sewer pipe, 117 pieces	63 88	
Sea foam, ½ dozen.....	50	
Sinks and covers, tin, 4.....	22 00	
Sealing wax, 55 pounds	2 60	
Surgical instruments	37 85	
Scale, beam, 1	25 00	
“ drug, 1	6 66	
“ wheel, 1	37 34	
“ wagon, 1	115 00	
Strainer cloth, 20 yards.....	8 00	
Special glue, 10 pounds	2 50	
Sweet corn, 8 quarts	50	
Thermometer cases, 2	1 00	
Tapers, 144 boxes	15 00	
Twine, 1 ball	10	
Tape measures, 2	20	
Thermometers, 3.....	6 25	
		\$1,188 08
Meats—		
Bacon, 1,852 pounds.....	\$187 70	
Beef, dried, 300 pounds	32 00	
Hams, S. C., 10,272 pounds	1,247 76	
Pork, fresh, 934½ “	52 97	
“ mess, 4 barrels and 41 pounds.....	63 28	
Pigs feet, 1 barrel	7 50	
Sausage, 1,511 pounds	139 59	
		1,730 80
Oils—		
Oil, coal, 52½ gallons.....	5 69	
“ engine, 50 “	10 50	
“ lard, 52 “	33 80	
“ machine, 1 gallon	1 35	
		61 34

CURRENT EXPENSE, ITEMIZED—Continued.

On what account.	Amount.	Total.
Papers and exchanges—		
Subscription to papers	\$70 37	
Exchanges	93 81	\$164 18
Patients' expenses—		
Paid on leaving asylum	\$45 05	
“ for pursuing elopements ..	114 65	159 70
Postage and envelopes—		
Box rent	\$3 75	
Envelopes, stamped, 5,500	121 10	
Postal cards, printed, 50	1 50	
Stamps	14 00	
Wrappers	2 20	142 55
Poultry and game—		
Chickens, dressed, 2,117½ pounds	\$99 21	
“ live, 1,046¾ “	97 41	
Ducks, dressed, 13 “	78	
Geese, “ 29½ “	2 65	
Pheasants, “ 4 “	60	
Quail, “ 53 “	5 30	
Rabbits, “ 219 “	21 90	
Turkeys, “ 3,811¾ “	322 37	550 22
Repairs—		
Boots and shoes	\$169 55	
Clocks	26 20	
Harness	15 65	
Pianos and organ	34 60	
Sewing machines	4 02	
Vehicles	82 65	332 67
Spices—		
Cinnamon, 23½ pounds	\$4 85	
Cloves, 20 “	6 50	
Ginger, 30 “	4 25	
Mustard, 80 “	13 60	
Nutmeg, 20 “	14 50	
Pepper, 246 “	45 62	
Sage, 9¾ “	3 75	93 07
Seeds and plants—		
Assorted plants	\$71 89	
Clover seed, ¼ bushels	1 38	
Flower “ 13 packages	2 45	
Timothy “ 4 bushels	8 90	84 6
Stock—		
China boar, 1	\$5 00	
Horse, 1	160 00	165 00
Telegrams and telephones—		
Telegrams	\$87 41	
Telephone repairs and supplies	13 35	100 76
Traveling expenses—		
Traveling expenses		69 8

CURRENT EXPENSE, ITEMIZED—Continued.

On what account.	Amount.	Total.
Vegetables—		
Beets, $\frac{1}{2}$ bushel.....	\$ 30	
Beans, string, 9 bushels	6 74	
Cabbage, 5,633 pounds	97 63	
Corn, green, 5,449 $\frac{1}{2}$ dozen	342. 07	
“ pop, 3 $\frac{3}{4}$ bushels	2 25	
Cucumbers, 10 dozen.....	2 00	
Onions, 41 $\frac{7}{8}$ bushels and 60 dozen.....	45 59	
Lima beans, 24 bushels.....	57 73	
Pumpkins, 129.....	7 35	
Peas, green, 9 $\frac{3}{4}$ bushels.....	8 55	
Potatoes, Irish, 4,045 $\frac{2}{3}$ bushels	2,627 37	
“ sweet, 123 $\frac{2}{5}$ bushels.....	118 84	
Rhubarb, 3,565 pounds.....	72 69	
Turnips, 1 $\frac{1}{4}$ bushels	31	
		\$3,389 42
Wood and willow-ware—		
Buckets, 16 dozen.....	\$24 70	
Baskets, 1 $\frac{1}{2}$ dozen	15 00	
Wash boards, 1 dozen.....	2 90	
		42 60
Painters' supplies—		
White lead, 500 pounds	\$35 00	
Zinc, 25 pounds.....	2 25	
		37 25
Tinners' supplies—		
Bucket woods, 1 gross.....	\$ 80	
Iron, char., 3 boxes.....	19 50	
Kettle ears, $\frac{1}{2}$ gross.....	52	
Nails, $\frac{3}{4}$, 12 papers.....	1 56	
Nails, galvanized, 15 pounds.....	98	
Rivets, coppered, 12 pair	3 00	
Salamoniac, 5 pounds	1 00	
Tin, bar, 50 pounds	12 50	
Zinc, sheet, 114 pounds.....	7 41	
		47 27
Upholsterers' supplies—		
Carpet, 25 $\frac{1}{2}$ yards.....	\$15 66	
Border, 16 yards.....	80	
Mar cloth, 70 $\frac{7}{10}$ yards	8 66	
Settee bottoms, 16	4 00	
Tow, 230 pounds	4 60	
		33 72
Wages—male—		
J. S. Foster, attendant, 12 months.....	\$324 00	
T. N. Wilson, “ 12 “	324 00	
G. W. Tinkham, “ 12 “	324 00	
C. P. Williams, “ 12 “	324 00	
W. P. Grimm, “ 6 $\frac{2}{3}$ “	181 80	
Homer Dern, “ 12 “	349 90	
Allison Cox, “ 12 “	340 00	
R. M. Figley, “ 12 “	316 27	
G. W. Pont, “ 6 $\frac{1}{3}$ “	198 00	
Jacob Geogline, “ 12 “	360 00	
W. D. B. Carpenter, “ 6 $\frac{1}{2}$ “	195 00	
W. H. Brown, “ 12 “	360 00	
W. G. Gallagher, “ 12 “	360 00	
G. B. Greenler, “ 12 “	394 00	
Jno. Journey, “ 12 “	360 00	

CURRENT EXPENSE, ITEMIZED—Continued.

On what account.	Amount.	Total.
Wages—males— Continued.		
Julius Tanner, attendant, $5\frac{1}{5}$ months.....	\$167 00	
J. W. Higgins, " 12 "	332 50	
Jethro Davis, " 12 "	360 00	
C. M. Schofield, " 12 "	420 00	
Wm. Hopkins, " $10\frac{19}{30}$ "	334 00	
Thos. C. Smiley, " $3\frac{3}{30}$ "	80 24	
T. B. Brush, " $5\frac{1}{3}$ "	122 66	
Chas. Cadamey, " $8\frac{19}{30}$ "	208 43	
Henry Dinsmore, " $6\frac{14}{30}$ "	165 41	
Samuel Withrow, " $5\frac{5}{30}$ "	118 83	
M. R. Matthews, " $5\frac{1}{2}$ "	137 50	
H. M. Hovey, " $1\frac{26}{30}$ "	42 93	
L. M. Carleton, suicidal night watch, $\frac{6}{30}$ months	6 00	
Hayden Martin, " " $6\frac{14}{30}$ "	161 66	
Winfield Scott, supervisor and police, 12 "	540 00	
C. O. Lowrey, assistant police, $6\frac{18}{30}$ months.....	198 00	
G. W. Port, assistant police, $5\frac{12}{30}$ "	162 00	
G. R. Dawson, night watch, 12 months	480 00	
Thos. Cabeen, " 12 "	420 00	
Jacob Brunner, engineer, 12 "	900 00	
Wm. Carskaddin, assistant engineer, 12 months	480 00	
Isaac Stanley, " 12 "	420 00	
Jas. Mansfield, fireman, 12 months.....	360 00	
Scott Duncan, " 5 "	150 00	
Wm. Coole, " $\frac{6}{30}$ "	6 00	
Jno. Cooley, " 12 "	360 00	
George Edgar, " 12 "	360 00	
George B. Dow, " $6\frac{1}{30}$ "	181 00	
Geo. Mansfield, " $2\frac{8}{30}$ "	28 00	
Lemuel Oxley, coal wheeler, 5 months.....	125 00	
James Duncan, gardener, $11\frac{23}{30}$ "	455 66	
Jas. Rose, assistant gardener, $3\frac{16}{30}$ "	53 00	
Jas. Wallace, baker, 12 months.....	380 00	
F. M. Cochran, " $4\frac{3}{30}$ "	120 00	
Lewis Millegan, " $7\frac{22}{30}$ "	215 00	
H. P. Wiggins, druggist, $\frac{14}{30}$ months	21 00	
W. R. Patterson, " 11 "	495 00	
Adam Gasslein, butcher, 12 "	540 00	
R. E. Grimes, basement superintendent, 12 months	420 00	
C. G. Knight, supt. patients' dining-room, 12 "	420 00	
M. R. Matthews, " $6\frac{1}{2}$ "	227 50	
W. D. B. Carpenter, " $6\frac{1}{2}$ "	192 50	
Elmer Enlow, dining-room, 12 months	216 00	
R. C. Schofield, " 12 "	216 00	
G. W. Cunningham, " 12 "	216 00	
Jas. Smith, " 12 "	216 00	
Dean S. Davis, " $5\frac{11}{30}$ "	96 60	
A. B. Richardson, secretary, 5 "	116 65	
David Dow, ass't storekeeper, 12 "	467 50	
R. E. Hamblin, extra services	400 00	
A. J. Lowe, telegraph operator, 1 month.....	25 00	
F. W. Myers, " $4\frac{2}{3}$ months	117 66	
E. F. Oakey, " $2\frac{14}{30}$ "	74 00	
Jas. Cabeen, hostler, 12 "	420 00	
Geo. W. Davis, teamster, 5 "	175 00	
Scott Duncan, " 7 "	245 00	
Elijah Sickles, " 9 "	270 00	
Geo. Sink, foreman, 8 "	480 00	

CURRENT EXPENSE, ITEMIZED—Continued.

On what account.	Amount.	Total.
Wages—Males—Continued.		
Griffin Lewis, laborer, $4\frac{13}{30}$ months	\$133 02	
Leroy Brown, all work, 12 "	300 00	
Lemuel Oxley, lawn mower, 7 "	180 00	
Ralph Sheville, florist, 12 "	725 00	
C. S. McDougall, ass't physician, 3 "	174 99	
H. H. Guitteau, carpenter, 2 "	100 00	
E. C. Needham, " 2 "	90 00	
Frank Schloss, tinner, 2 "	90 00	
C. S. Newsom, upholsterer, 2 "	70 00	
Wm. Somers, brick-mason, 1 month	60 00	
Daniel Fernau, services rendered	10 00	
Jason Huffman, ironing room, 4 months	18 00	
Jas. Purcell, "	5 00	
Jno. Booth, stable boy	15 00	
Osmar Parish, laundry	5 00	
Geo. H. Earhart, painter, 2 months	80 00	
I. C. Sparks, " 1 month	14 00	
Jasper Carsen, laborer, $9\frac{1}{4}$ days	16 18	
Lewis Carsen, " $8\frac{3}{10}$ "	13 12	
Jas. Grimm, " $8\frac{1}{4}$ "	14 43	
		\$21,988 94
Wages—Female—		
Ida Dyke, Attendant, 12 months	\$234 26	
Maggie Cox, " 12 "	216 00	
Mary A. Shannon, " 12 "	216 00	
Mahala McGwigan, " 12 "	216 00	
Abbie Wells, " 12 "	201 00	
Irene Klintworth, " 12 "	216 00	
Sadie Radford, " 12 "	216 00	
Mary McCann, " $4\frac{23}{30}$ "	85 80	
S. J. Stanley, " 12 "	216 00	
Sue Norris, " $8\frac{14}{30}$ "	152 40	
S. M. Clark, " 12 "	216 00	
D. T. Miller, " 12 "	202 66	
Katie Fisher, " $9\frac{6}{30}$ "	169 53	
Mattie Daft, " 12 "	240 00	
Emma Allen, " 12 "	229 00	
Viola Goodspeed, " 12 "	240 00	
Ettie Bivens, " $10\frac{27}{30}$ "	218 00	
Laurinda Ivers, " $5\frac{5}{6}$ "	116 66	
Jennie Flannigan, " $6\frac{6}{30}$ "	111 73	
Hattie Gregory, " 12 "	240 00	
Lida McPherson, " 12 "	235 66	
Amanda Wade, " 12 "	240 00	
Melissa Daft, " $3\frac{16}{30}$ "	70 66	
Leona Hanlon, " 12 "	231 06	
Alice Baumgartner, " 12 "	240 00	
Selina Tanner, " 12 "	264 00	
Lidia Friend, " 12 "	264 70	
M. M. Wilson, " 12 "	216 00	
Jennie Foster, " 12 "	216 00	
Sue Quigley, " $5\frac{8}{30}$ "	94 80	
Loretta Crouse, " $7\frac{13}{30}$ "	119 35	
Dora Barker, " $5\frac{19}{30}$ "	101 40	
Nellie Hall, " $4\frac{11}{30}$ "	78 60	
Hattie B. Golden, assistant matron, 12 months	300 00	
Mary A. Sterritt, night-watch, 12 "	300 00	
Maggie Donally, " $9\frac{11}{30}$ "	206 07	
Nettie Cottrill, " $2\frac{10}{30}$ "	57 93	

CURRENT EXPENSE, ITEMIZED— Continued.

On what account.	Amount.	Total.
Wages—Female—Continued.		
Lizzie Woodard, supervisoress, 11 ⁹ / ₃₀ months	\$256 00	
Dora Barker, " ²¹ / ₃₀ "	14 00	
Jennie McCann, ass't supervisoress, 12 "	150 00	
Sallie Mialand, seamstress, 11 ¹ / ₂ "	207 00	
Abbie Hutchinson, seamstress, 12 months	216 00	
Cora Davis, chambermaid, 12 "	156 00	
Laura Woods, " 12 "	144 00	
Mary Josten, dining-room, 12 "	156 00	
Maggie Ohlinger, " 12 "	156 00	
C. Ohlinger, " 12 "	156 00	
Annie Cain, " 12 "	156 00	
Allie Ferrill, " 12 "	156 00	
Maggie Arbuckle, " 9 ² / ₃₀ "	117 87	
Aura Hanlon, " 4 ¹¹ / ₃₀ "	56 77	
Annie Tanner, " 9 "	117 00	
Kate Knight, " 12 "	216 00	
Mattie Murphy, " 7 ¹⁷ / ₃₀ "	98 36	
Jennie Ferrill, " 3 "	39 00	
F. M. Matthews, " 6 ¹ / ₂ "	117 00	
Dora Barth, chief, ironing room, 12 "	180 00	
F. M. Matthews, ironing room, 5 ¹ / ₂ "	66 00	
Dell Hill, " 12 "	144 00	
Mary Rairdon, " 12 "	144 00	
Amanda Davis, " 1 month	12 00	
Lizzie Wheatley, " 6 ⁴ / ₃₀ months	73 60	
Maggie Radford, " 5 "	60 00	
Sadie Westlake, " 12 "	144 00	
Ida Bean, " 11 ⁷ / ₃₀ "	134 80	
M. Holmes, " ⁵ / ₃₀ "	2 00	
Ella Carskaddin, chief laund'ss, 12 "	192 00	
Kate Sheridan, laundry, 12 "	144 00	
Lettie Woods, " 12 "	144 00	
Ellen Siegfried, " 12 "	144 00	
Elizabeth McCole, chief cook, 12 "	240 00	
Emma Lightfritz, cook, 8 "	96 00	
Annie Tanner, " 3 "	36 00	
Lotta Blackburn, " 12 "	144 00	
Mary E. Brown, " 12 "	180 00	
Maria Mulligan, " 12 "	180 00	
Annie Lohr, " 12 "	180 00	
Jennie Ferrill, " 9 "	108 00	
Emma Ferrill, " 4 "	48 00	
Lotta Wilson, assorting room, 12 "	180 00	
Amanda Davis, " 4 "	48 00	
Maggie Radford, " 7 "	84 00	
Theresa Sharshall, usher, 12 "	144 00	
Sue Norris, stenographer and operator, 3 ¹⁶ / ₃₀ months	88 33	
		\$13,215 00
Ordinary Repairs.		\$116,059 14
Blacksmithing—		
Blacksmithing		\$54 73
Brick, lime and cement—		
Bricks, 123,765	\$623 90	
Cement, 4 sacks	4 00	
Lime, 8 barrels	4 30	
		632 20

CURRENT EXPENSE, ITEMIZED—Continued.

On what account.	Amount.	Total.
Drayage, barrels, boxes, etc—		
Drayage, barrels, etc.....		\$ 9 28
Engineer's supplies—		
Bush, tees, ells, etc., 174.....	\$33 36	
Ell, 10-inch, 1	6 00	
Fittings, 262 pounds	21 29	
Flange, tee, 1	5 13	
Gauge glasses, 6.....	72	
Grate bars, 10	19 98	
Galvin water valve, 1	40 50	
Hot blast box, with defector plates	34 00	
Linings, 800 pounds.....	20 00	
Plyers, 1 pair	50	
Packing, 203 pounds	49 65	
Piston rod stuffing box, 1.....	8 85	
Rachet brace, 1	1 75	
Stuffing boxes for steam chest, 2.....	2 85	
Steam trap, 1	20 00	
Steam traps, 7	5 75	
Screws, air vent, 36	3 60	
Valves, 34	65 86	
“ spindles, 1 set	1 50	
Water cylinder valve, 1	240 00	
		581 29
Glass—		
Glass, 33 boxes	\$96 32	
“ 45 lights	33 09	
		129 41
Hardware—		
Axes, 1.....	\$ 80	
Axle pulleys, 8	24	
Anti-rattlers, 2 pairs	15	
Bolts, 22 $\frac{1}{8}$ dozen	7 41	
Brads, 2 papers.....	25	
Butts, 5 pair	30	
Bull tongs, 2.....	50	
Casters, 134 sets	13 97	
Clevis, 1.....	10	
Drill bits, 2.....	80	
Escutcheons, 8.....	15	
Files, 26.....	4 10	
Fire door, 1.....	1 25	
Hinges, 21 $\frac{3}{4}$ pounds	1 29	
“ 57 pair	5 27	
Hooks, and staples, 12.....	1 05	
Hooks, wardrobe, 8 $\frac{1}{2}$ gross.....	12 10	
Hatchets, 6.....	2 55	
Hammers, 6	1 13	
Iron, 487 $\frac{1}{4}$ pounds.....	13 11	
Knives, table, 2 dozen... ..	1 66	
Keys, 3 $\frac{2}{3}$ dozen	6 42	
Locks, 55	14 28	
Monkey wrench, 1.....	50	
Nails, 1,852 pounds.....	57 88	
“ picture, 1 gross	2 40	
“ trunk, 1 $\frac{1}{2}$ dozen pair.....	1 70	
Piping, iron, 768 feet.....	70 13	
Rivets, 9 pounds.....	2 25	
Stove fixtures, 205 pounds.....	14 35	

CURRENT EXPENSE, ITEMIZED—Continued.

On what account.	Amount.	Total.
Hardware—Continued.		
Stove linings, 1 set	\$3 50	
Steel, 17 $\frac{3}{4}$ pounds	2 02	
Spring cutters, 1 dozen.....	12	
Shovels, $\frac{1}{2}$ dozen.....	5 40	
Screws, 67 gross.....	16 68	
Trowel, 1.....	60	
Washers, 1 $\frac{1}{2}$ pounds.....	20	
Wrot straps, 2	50	
		\$267 11
Lumber, doors, etc.—		
Doors, 16.....	\$12 00	
Lath, 11 bundles	1 55	
Oak, 1,693 feet	27 11	
Poplar, 5,343 feet.....	75 77	
Pine, 13,642 “	513 80	
		630 23
Miscellaneous—		
Axe handles, 2	\$ 50	
Brush, whitewash, 1	3 33	
Chalk, 2 dozen balls.....	20	
Cotton cord, 16 $\frac{1}{8}$ pounds.....	4 81	
Copying sheets, 24	3 02	
Coppered bucket handles, 16 $\frac{1}{2}$ pounds.....	99	
Faucets, 10	80	
Foundations for fire-escapes, 2.....	18 87	
Freezer, ice cream, 1	13 50	
Flour sieve, 1.....	20	
Grass hooks, 2	42	
“ knife, 1.....	75	
Hoes, 1 dozen	4 63	
Hose, fire, 150 feet.....	60 00	
Knobs, porc., 1 dozen.....	25	
Lanterns, $\frac{1}{2}$ dozen.....	3 75	
Lawn rakes, 8	3 75	
Manure forks, 8.....	3 80	
Pie pans, 7	3 15	
Polish, 3 boxes	50	
Paring knives, 2.....	40	
Red lead, 10 pounds	80	
Rakes, 5.....	2 25	
Rope, 35 pounds	6 75	
Sand sieves, 3.....	80	
Shears, 7 pair.....	6 25	
Shavings, 1 load	40	
Shovels, 19	14 25	
Slate, 8 sqrs	34 00	
Slate slabs, 8.....	30 00	
Sample awning fixtures, 2	2 00	
Scrub brush handles, 1 gross	15 00	
Seat bottoms, 24	7 20	
Spade handles, 6.....	75	
Sand paper, 4 quires	1 00	
Scythes, 1, snaths, 3... ..	3 00	
Scythe stones, 6	30	
Sugar scoop, 1	25	
Trowels, 3	30	
W. C. hoppers, 2.....	21 00	

CURRENT EXPENSE, ITEMIZED—Continued.

On what account.	Amount.	Total.
Miscellaneous—Continued.		
Wash basin, 1	\$2 35	
Wheelbarrows, 6	13 00	
		\$289 17
Repairs—		
Buggies and carriages, etc.	\$105 35	
Boots and shoes	8 35	
Boilers	45 50	
Engineers' tools	36 49	
Wringer rolls	7 00	
		202 69
Tinners' supplies—		
Bar tin, 50 $\frac{1}{4}$ pounds	\$13 07	
Copper, 48 $\frac{1}{2}$ "	8 73	
Coppered wire, 198 pounds	7 17	
Iron, C. H. B., 1,733 "	99 51	
Mallets, $\frac{1}{2}$ dozen	63	
Rivets, 6 pounds	1 26	
Soldering irons, 1 pair	92	
Squaring shears, 1 pair	38 00	
		169 29
Upholsterers' supplies—		
Buttons, 1 gross	\$ 15	
Gimp, 2 gross	2 75	
Hair cloth, 22 $\frac{3}{4}$ yards	20 48	
Nails, 1 M	60	
Tacks, 13 dozen papers	8 84	
Twine, 9 pounds	4 95	
		37 77
Wages—		
H. H. Guittean, carpenter, 7 $\frac{24}{30}$ months	\$390 00	
E. C. Needham, " 8 "	360 00	
Frank Schloss, tinner, 9 months	405 00	
C. S. Newsom, upholsterer, 9 months	320 00	
Wm. Tate, mason, 146 days	249 24	
J. M. Nye, carpenter, 149 days	223 50	
J. C. Youtz, " 123 $\frac{1}{2}$ "	185 25	
Samuel Axtell, " 9 $\frac{1}{2}$ "	14 25	
Wm. Somers, brick mason, 23 $\frac{1}{2}$ days	64 62	
		2,211 86
<i>Officers' Salaries.</i>		
		\$5,215 03
A. B. Richardson, superintendent, 12 months	\$1,200 00	
H. C. Eyman, assistant physician, 6 "	350 00	
C. O. Dunlap, " 6 "	350 00	
W. P. Crumbacker, " 12 "	700 00	
Agnes M. Johnson, " 12 "	700 00	
C. S. McDougall, " 9 "	524 97	
Julia D. Richardson, matron, 12 months	400 00	
R. E. Hamblin, steward, 12 months	800 00	
U. S. Grant, storekeeper, 12 "	537 50	
		\$5,562 47
<i>Trustees' Expenses.</i>		
John M. Amos, attending Board meetings	\$44 20	
H. M. Horton, " " "	52 45	
Theo. Davis, " " "	23 20	
D. M. Barrett, " " "	62 85	
		\$182 70

CURRENT EXPENSE, ITEMIZED—Continued.

On what account.	Amount.	Total.
<i>Books and Pictures.</i>		
Medical works, 19 volumes	\$59 03	
Library books, 103 "	94 18	
Subscription to magazines, 1 year	49 75	
Picture moulding, 213½ feet	28 96	
Drayage and packing	50	
		\$232 42
<i>Furniture and Carpets.</i>		
Border, 13½ yards	\$9 88	
Carpet, tapestry, 174 yards	125 85	
" super, 621 yards	404 51	
Chair, office, 1	9 00	
" operating, 1	53 00	
Chairs, 144	241 42	
Curtains, lace, 4 pairs	24 00	
Drayage, etc	1 75	
Matting, 225 yards	126 00	
Paper, 470 pounds	14 10	
Making carpet, 54 yards	2 70	
Walnut sample case, 1	28 50	
" bureau, 1	12 50	
Wash stand, 1	12 75	
Carpet, Brussels, 19 yards	14 26	
		\$1,080 22
<i>Painting.</i>		
G. H. Earhart, painter, 6½ months	\$273 32	
T. C. Sparks, " 3 "	30 00	
Boiled oil, 50½ gallons	20 61	
Bronze liquid, ½ gallon	1 25	
Chrome yellow, 18 gallons	2 34	
" green, 5 "	60	
Cans, 5	2 25	
Engine finishing, 1 gallon	5 00	
Furniture varnish, 10 gallons	10 00	
Green dryer, 5 pounds	1 75	
Gum shellac, 3 "	75	
Hard oil finish, 1 gallon	1 00	
Japan dryer, 5 gallons	3 35	
Locomotive black, 2 gallons	3 00	
P. G. bronze and powder, 12 pounds	2 25	
Paint brushes, 45	20 00	
Putty knives, 4	1 50	
Palette " 1	25	
Preservative, 50 gallons	93 75	
Putty, 560 pounds	11 20	
Oak graining, 23 gallons	3 36	
Sand paper, 13 gross	2 34	
Sash tools, 1½ dozen	2 62	
Turpentine, 289¾	117 12	
Vermilion, American, 3 gallons	42	
" English, 5 "	4 25	
White zinc in turpentine, 100 pounds	20 00	
White lead, 5,500 pounds	340 00	
		\$974 28

CURRENT EXPENSE, ITEMIZED—Continued.

On what account.	Amount.	Total.
<i>Two Tubular Boilers.</i>		
Expenses of T. R. Batman	\$44 70	
T. R. Batman, inspecting and supervising, 3 days	30 00	
Superintendent of construction	26 00	\$100 70
Estimates paid on contract		824 90
<i>Grading.</i>		
		\$925 60
Geo. Link, foreman, 4 months	\$240 00	
Griffin Lewis, laborer, $4\frac{6}{30}$ months	125 98	
Elijah Sickles, teamster	60 00	\$425 98
<i>Fencing.</i>		
Pine, 447 feet		\$22 36
<i>Furniture for Dining-rooms and Dormitories.</i>		
Chairs, $5\frac{1}{2}$ dozen		\$42 08
<i>Mangle and Laundry Machinery.</i>		
Automatic ironing machine, 1		\$525 00
<i>Fire-escapes for Infirmary Wards.</i>		
Fire-escapes as per contract, 2	\$325 00	
G. H. Earhart, painter, $\frac{1}{2}$ month	25 00	\$350 00
<i>Window-screens for New Buildings.</i>		
Wire gaurds, 268	\$272 00	
H. H. Guitteau, carpenter, 1 month	50 00	
E. C. Needham, " 1 "	45 00	\$367 00
<i>Ordinary Repairs Deficiency.</i>		
Automatic tanks, 3	\$38 40	
Bush, ells, tees, etc., 117	23 34	
Cabinet glue, 15 pounds	2 25	
Extra brick work on boilers	56 86	
Extra brick stays, 4	21 72	
Fittings, 26 pounds	2 54	
Hoppers, enam., straight back, 6	33 60	
Lumber, poplar, 3,117 $\frac{1}{2}$ feet	61 00	
" oak, 290 feet	7 25	
" ash, 116 "	3 48	
" pine, 107 "	5 34	
Lime, 25 barrels	13 75	
Pipe, 629 feet	70 54	
Pipe covering, 1,497 feet	309 35	
Plaster, 1 barrel	2 50	
Rubber packing, 118 pounds	18 88	
Shoeing horses	14 90	
Shade cord, 2 gross	1 40	
Shavings, 1 load	50	
Sash doors, 3	7 00	

CURRENT EXPENSE, ITEMIZED—Continued.

On what account.	Amount.	Total.
<i>Ordinary Repairs Deficiency—Continued.</i>		
Twine, 6 pounds	\$1 80	
Urinals, 3	14 40	
Valves, Chapman, 6.....	20 10	
Walnut seat bottoms, 72.. ..	9 51	
Walnut veneer seating, 100 feet.....	38 50	
H. H. Guitteau, carpenter, 1 month	50 00	
E. C. Needham, " 1 "	45 00	
Frank Schloss, tinner, 1 month	45 00	
C. S. Newsom, upholsterer, 1 month	30 00	
G. H. Earhart, painter, 1 "	40 00	
Wm. Fate, plasterer, 18 days	31 50	
Wm. Somers, brick mason, 23 days.....	46 00	
		\$1,066 41
<i>For Brick Smoke Stack and Sheet Iron Work.</i>		
Drawings and specifications of brick chimney	\$50 00	
Butman's expenses, Chicago to Athens and return, and 1 day's time.....	34 75	
Stone for foundation, $93\frac{2}{3}$ cubic yards	278 15	
Laying brick and erecting brick smoke stack	937 10	
		\$1,300 00
<i>Repairing Water-closets.</i>		
Automatic tanks, 15.. ..	\$192 00	
Bush, bends, plugs, etc., 313.. ..	99 43	
Drayage, etc.....	2 25	
Fittings, 6 pounds	90	
Hoppers, W. C., 31.....	185 40	
Leather belting, 63 feet.....	19 32	
Pipe iron, 530 feet	110 31	
Side lace leather, 18 square feet	5 40	
Urinals, 6.....	42 00	
		\$657 01
<i>Slaughter House, Pig Pens and Sheds for Cattle.</i>		
J. C. Youtz, carpenter, 78 days.. ..	\$117 00	
Foster Rice, " 3 months	30 00	
Griffin Lewis, laborer, 3 "	90 00	
W. E. Drau, stone mason, 23 days	57 50	
Wm. McCole, " 2 "	5 00	
Cement, 2 barrels.. ..	2 50	
Doors, 15	39 75	
Iron roofing, $41\frac{9}{10}$ squares	172 00	
Lumber, 1,176 feet	20 31	
" ash, 108 feet	3 24	
" drop siding, 3,800 feet	95 00	
" oak, $17,039\frac{2}{3}$ "	170 49	
" poplar, 938 "	23 45	
" pine, $21\frac{1}{3}$ "	1 10	
" oak flooring, 1,000 "	25 00	
" ridge roll, 90 "	2 70	
Shavings, 4 loads.....	2 00	
Stone for foundation, 16 cubic yards	39 00	
		\$896 04

AMOUNT OF FRUIT AND VEGETABLES PUT UP DURING THE YEAR.

CANNED FRUIT.

Blackberries	78 gallons.
Cherries	6 "
Grapes.....	149 "
Peaches.....	324 "
Raspberries	299 "
Tomatoes	1,273 "
Total gallons canned.....	<u>2,089</u>

PICKLES.

Cucumber	45 gallons.
Mango	55 "
Peach.....	12 "
Tomato	11 "
Tomato catsup	74 "
" kraut	210 "
Spiced peaches.....	14 "
Total gallons canned.....	<u>421</u>

JELLIES.

Mixed	<u>31 gallons.</u>
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PRESERVES, BUTTER, ETC.

Butter, grape	45 gallons.
" peach	166 "
" tomato	18 "
Jam, blackberry	46 "
Preserves, tomato	12 "
Total gallons canned.....	<u>287</u>

ARTICLES MANUFACTURED IN SEWING ROOM DURING YEAR.

Aprons, gingham	462
" white	142
" oil cloth	6
Blankets	23
Bonnets	36
Bolster cases ..	12
" ticks	3
Comforts	173
Drawers, pairs	513
Dresses, calico	286
" gingham	35
" strong	93
" lawn	17
" worsted	1
Gowns	14
Mittens, pairs	60
Pillow cases	720
" ticks	42
Rugs	6
Shrouds ..	23
Shirts, white ..	297
" colored	277
Sheets	503
Spreads	73
Suspenders, pairs	355
Sacques, gingham	6
Skirts	325
Table cloths	87
Towels, single	1,002
" double	279
Ticks	172
" pillow	26
Waists	177

TENTH ANNUAL REPORT
OF THE
STATE INSPECTOR OF OILS,
TO THE
Governor of the State of Ohio,
FOR THE YEAR 1887.

To His Excellency, J. B. FORAKER, Governor of the State of Ohio :

SIR: In accordance with the statutes providing for the appointment of Inspector and Deputy Inspectors of mineral oils and other substances, and to regulate the sale of the same for illuminating purposes, I herewith submit my report for the inspection of illuminating oils for the period commencing November 1, 1886, to and including October 31, 1887.

LOUIS SMITHNIGHT,
State Inspector of Oils.

LIST OF DEPUTIES.

Names.	Post-office address.	Date of appointment.
Albert Smithnight.....	Cleveland, Ohio.....	May 15, 1886.
F. W. Green.....	" "	" "
Oliver P. Perdue.....	" "	" "
H. C. Smith.....	" "	" "
John J. Feil.....	" "	August 19, 1886.
George I. King.....	Cincinnati, "	May 15, 1886.
J. W. Harries.....	Dayton, "	" "
N. D. Cochran.....	Toledo, "	" "
Wm. Hays..	Galion, "	" "
J. H. Harbarger.....	Columbus, "	" "
J. B. Wheatley.....	Marietta, "	" "
N. A. Frederick.....	East Liverpool, Ohio.....	" "
Joseph Kelley.....	Alliance, "	" "
J. S. Willis..	Springfield, "	" "
W. F. Litten.....	Bellaire, "	" "
H. A. Holdridge.....	Lima, "	" "
T. J. Reark..	East Liverpool, "	June 24, 1886.
Adolph Bonstedt.....	Akron, "	September 1, 1886.
S. C. Moore.....	Findlay, "	November 16, 1886.
J. H. Gorman.....	Dayton, "	December 22, 1886.
J. K. Arnold.....	Zanesville, "	February 1, 1887.
Frank W. Pierson.....	Mansfield, "	July 19, 1887.
James P. Evans.....	Bradner, "	September 21, 1887.

ANNUAL REPORT.

I have seen no reason to change or modify the following instructions which were issued from this office May 15, 1886. They have been and are now very generally complied with :

OFFICE STATE INSPECTOR OF OILS FOR THE STATE OF OHIO,
CLEVELAND, O., *May 15, 1886.*

To Deputy Inspectors of Oils for the State of Ohio :

The law for inspection of mineral oils, passed April 9, 1880, requires the State Inspector of Oils to prepare rules and regulations for the direction of Deputy Inspectors. In pursuance of the authority, I call your attention to the following directions, which you will please observe in the discharge of your official duties :

I. Your special and careful attention is called to the act under which your appointments have been made, with a view to your instructions upon many points not necessary to be referred to in this circular.

II. The process for testing oils is fully explained in the first section of the act referred to, with a proviso that it shall be deemed a compliance with the law to test oils, described by an apparatus known as the "Foster Cup" or Foster's Automatic Oil Tester, designed by James Foster, Jr., & Co., Cincinnati, Ohio.

III. The standard test for all illuminating oils in Ohio is 120° Fahrenheit's thermometer, and all illuminating oil that will bear a flash of 120°, as shown by the Foster apparatus, can be legally sold in Ohio, and all illuminating oils that will not bear a flash test of 120° cannot be legally sold in this State for illuminating purposes. Keep a record of each inspection in a book, noting the degree at which the flash takes place. In testing from tanks the greatest care should be taken in seeing that the same oil tested goes into the barrels before branding. The safest way is to take samples from several barrels after being filled, mix together and test from that.

IV. The brands for "approval" and "rejection" will be furnished from this office at the expense of the deputy. None other brands than those furnished from this office must be used, and but one of each kind will be allowed to each deputy.

V. Deputies will, under no circumstances, allow their brands to be used by others, or be out of their possession, but will habitually brand the barrels themselves or have it done under their personal supervision and in their presence.

VI. The brand impression will be, ordinarily, placed upon the gauge end of the barrels, but when other marks interfere, then wherever practicable.

VII. Blanks for reports will be furnished from this office. Each deputy is required to make report to the State Inspector of Oils by mail on the first day of each month, in accordance with the blanks furnished.

VIII. The fees are as follows, and are collectible upon approval or rejection lots : Forty (40) cents per barrel for a single barrel ; twenty-five (25) cents per barrel for lots not exceeding ten barrels ; fifteen (15) cents per barrel for lots not exceeding

twenty barrels ; ten (10) cents per barrel for lots not exceeding fifty barrels ; five (5) cents per barrel for all lots exceeding fifty barrels.

IX. The State Inspector enjoins upon each deputy a personal supervision relative to the enforcement of the law, and all violations thereof shall be promptly reported to the Prosecuting Attorney of the county in which the violation occurs and the facts reported to this office.

X. In order to produce uniformity in the test of oils with the Foster Cup, your special and careful attention is called to the manner of testing oils, especially in cold weather. If you fill your cup up to the mark indicated with oil at a temperature of 30 degrees, Fahrenheit's Thermometer, and heat it two degrees per minute, up to 120 degrees, the oil will expand four and one-half per cent., or, in other words, if the cup is filled up to the mark with eight and one-half ounces of oil, at a temperature of 30 degrees and heated to 120 degrees, the volume of oil will be increased to nearly nine ounces, the vapor will increase correspondingly, and the oil will flash at 116 degrees, when the same oil would stand 123 degrees if the cup were filled up to the mark, when at a temperature of 60 degrees. Therefore, deputies are hereby instructed to begin at all times, when testing oils, at a temperature of 60 degrees Fahrenheit. For all points not covered by these instructions, the deputies will strictly examine the law, bearing in mind that only oils sold or manufactured for illuminating purposes for use within the State are subject to inspection.

XI. Although not provided by law, it is exceedingly desirable that all accidents arising from the use of petroleum and its products as an illuminating fluid, should be investigated and the facts reported to this office.

XII. In conclusion I desire to impress upon you an appreciation of the responsibility resting upon you officially. Trusts are committed to you which should never be lost sight of. Human lives, as well as the safety of property, may depend on the issue of an inspection.

The law must be enforced impartially and honestly, without fear or favor.

LOUIS SMITHNIGHT,

State Inspector of Oils.

The total number of barrels of oil inspected from November 1, 1886, to and including October 31, 1887, amounted to three hundred and seventy-eight thousand three hundred and fifty-nine. Of this number three hundred and seventy-eight thousand two hundred and seventeen were approved, and one hundred and forty-two were rejected. After deducting the number of barrels rejected, there remains three hundred and seventy-eight thousand two hundred and seventeen for consumption in Ohio.

Total number of barrels inspected.....	378,359
Deduct barrels rejected.....	142
	<hr/>
Total barrels estimated to be consumed in Ohio.....	378,217

Inspected by deputies and myself.	No. barrels.	Amt. of fees.
Cleveland	155,195	\$ 7,759 75
Marietta	24,426	1,225 95
Toledo	19,743	999 45
Cincinnati	52,752	2,639 16
Columbus	18,130	916 05
Galion	20,008	1,002 50
East Liverpool ..	26,378	1,848 90
Alliance	11,850	595 20
Dayton	18,484	924 20
Akron	4,257	212 85
Springfield	5,263	269 35
Bellaire	10,146	508 50
Lima	3,616	196 10
Findlay ..	325	16 25
Zanesville	4,717	235 85
Mansfield	3,065	77 60
Bradner	4	1 25
Totals	378,359	\$19,428 91

The following table will show the place of manufacture :

Name.	Approved.	Rejected.	Total.
Cleveland, Ohio	287,162	.....	287,162
Marietta, "	8,008	.....	8,008
Toledo, "	646	.....	646
Lima, "	3,638	.....	3,638
Findlay, "	435	.....	435
Bradner, "	80	.....	80
Pittsburgh, Pennsylvania	18,608	.....	18,608
Smith's Ferry, "	1,095	.....	1,095
Titusville, "	1,423	62	1,485
Freedom, "	4,172	.....	4,172
Oil City, "	11,287	80	11 367
Allegheny, "	2,939	.....	2,939
Clarendon, "	86	.....	86
Coleman, "	4,303	.....	4,303
Franklin, "	1,921	.....	1,921
Beaver, "	191	.....	191
Reno, "	853	.....	853
Philadelphia, "	716	.....	716
Buffalo, New York	38	.....	38
Olean, "	900	.....	900
Wheeling, West Virginia	10,322	.....	10,322
Parkersburg, "	19,394	.....	19,394
Totals	378,217	142	378,359

Manufactured in Ohio	299,969
" Pennsylvania	47,736
" New York	938
" West Virginia	29,716
Total	378,359

RECEIPTS AND EXPENDITURES.

Amount received from all sources	\$19,428 91
Amount paid to deputies.....	\$16,176 58
Stationery, apparatus, traveling and other expenses	310 13
	<hr/> 16,486 71
Net receipts for State Inspector	\$2,942 20

The law is being rigidly enforced throughout the State; manufacturers, dealers and consumers continue to yield a cheerful compliance with the provisions of the statutes, and the working of the law is giving general satisfaction to all concerned. Deputy Inspector W. F. Litten, of Bellaire, caused the arrest of a party at Bridgeport, Ohio, for selling uninspected oils, in violation of section 397 of the law. The court, in this case, imposed a fine of one hundred dollars (\$100.00). No other violations have come under my observation.

Ohio legal oils, inspected by deputies and myself, show an average flash test of $123\frac{1}{2}^{\circ}$ Fahrenheit's thermometer, which is $3\frac{1}{2}^{\circ}$ higher test than required by law. The number of barrels of oil that were rejected is only 142; the reason for this is, that most of the oil is inspected at the refineries and tested before the same is filled into barrels, and if the oil is found below test it is mixed with heavier oils until it comes up to the requirements of the law before the same is filled into barrels. It affords me pleasure to report that so far as I have been able to learn from the use of Ohio legal oils, for illuminating purposes in the State, no lamps have exploded, no lives have been lost, no persons were injured, and no property destroyed within the past year. Frequent accidents, however, are reported from the use of gasoline stoves, carelessness in kindling fires with oil, and upsetting or filling lamps while burning, which have resulted in the death of four and injury to ten persons, and the loss of thousands of dollars in property. In States where light oils are used, and where there are no laws governing the manufacture and sale of the same, accidents from lamp explosions are quite frequent.

Since presenting my last report close attention has been given to the development of petroleum in Ohio. Now, as then, the value is unsettled, having steadily declined until it is selling in the field at fifteen cents per barrel. Refiners seem to be baffled in their endeavors to successfully obtain acceptable products, and this, coupled with enormous yields in other States, is said to be the cause of existing low prices. The limited quantities of illuminating oils, made from Ohio crude, which have been offered to my deputies for inspection, have, with but few exceptions, been found to comply with the law.

From time to time samples have been examined with a view to

compare them with the products obtained from Pennsylvania oils; thus far, none have been found which could successfully compete. The odor thrown off by the lamp, and the rapid discoloration of the lamp chimney, seem to be as characteristic of the Ohio as of the Canadian oils. This is asserted by many of the manufacturers to be due to the pressure of sulphur in compound, which they say they have not been able to eliminate. It is, however, asserted by others, that this difficulty has been overcome, and that they are obtaining illuminating oils second to none. Thus far I have not been able to verify this claim. An earnest effort is being made to foster the use of the crude oil as a fuel. This is, necessarily, a slow work, but, I am informed, wherever it has been introduced, the results have been most satisfactory in every way. My official duties under the law regulating the use of petroleum in Ohio are fulfilled when any given lot has been inspected to determine its vaporizing point. I will be glad, however, at any time to examine any special samples with a view to determine their illuminating value, and furnish reports of such examination to those sending such samples.

In giving this statement of crude oil produced in the State of Ohio from August 1, 1884, to and including October 31, 1887, I may explain that the Macksburg District includes not only what is probably known as the Macksburg Field, but also the old developments at Cow Run in Washington county, which has been producing oil for many years; the production now being about 30 to 40 barrels per day. Beside this production there is a very small and irregular production from shallow wells, the oil from which is at times hauled to Marietta by trains. I do not suppose that the whole amount will equal a thousand barrels in a year, possibly not half that quantity. In the Lima District is included the production of all wells, the oil from which is being saved or utilized. There are a number of places in Wood county where oil has been found, but in quantities so small as not to warrant their being operated, and after producing a part of a tank the wells have been stopped. The stock of oil on hand in the custody of the Macksburg Pipe Line on November 1, 1887, was 462,595 barrels, and there was at the wells a stock of 17,900 barrels. The stock of oil on hand in the Lima field in the custody of the Buckeye Pipe Line Company, November 1, 1887, was 3,420,406 barrels. The stock at the wells was estimated November 1, 1887, at 172,317 barrels.

The petroleum producing territory in the Lima District is estimated to be 20,000 acres in Allen and Auglaize counties; 9,000 in Hancock county; and 11,000 in Wood county. These are, however, mere es-

timations. There will undoubtedly be developed ultimately a much greater acreage, but as the production is now far in advance of the consumption, the development is not active.

Respectfully submitted,

LOUIS SMITHNIGHT,

State Inspector of Oils

CLEVELAND, *November* 14, 1887.

The following figures are, I am informed, correct, and permit an estimate of the value of the oil producing industry to the State:

CRUDE PETROLEUM PRODUCED IN OHIO FROM AUGUST 1, 1884, to OCTOBER 31, 1887.—
BARRELS OF 42 GALLONS.

	Macksburg District.	Lima District.		
	Counties of—	Counties of—		
	Washington and Noble.	Allen and Auglaize.	Hancock.	Wood.
1884.				
August	\$3,001 62	.....	.....	.....
September	3,471 82	.....	.....	.....
October	6,049 90	.....	.....	.....
November	8,712 69	.....	.....	.....
December	3,057 91	.....	.....	.....
1885.				
January	11,394 23	.....	.....	.....
February	20,625 13	.....	.....	.....
March	29,416 21	.....	.....	.....
April	40,847 40	.....	.....	.....
May	52,897 47	.....	.....	.....
June	71,855 10	.....	.....	.....
July	81,121 42	.....	.....	.....
August	77,693 13	.....	.....	.....
September	77,326 20	.....	.....	.....
October	71,517 87	.....	.....	.....
November	70,566 90	.....	.....	.....
December	72,181 33	.....	.....	.....
1886.				
January	65,452 16	.....	.....	.....
February	56,192 36	.....	.....	.....
March	67,465 92	.....	.....	.....
April	66,571 80	.....	.....	.....
May	64,522 80	\$15,481 80	.....	.....
June	64,162 50	22,982 13	.....	.....
July	62,485 46	45,427 85	.....	.....
August	58,688 54	77,679 41	.....	.....
September	50,158 50	86,740 73	.....	.....
October	50,176 91	104,930 74	.....	.....
November	45,540 60	134,180 31	\$4,695 00	.....
December	43,606 15	140,456 28	14,288 94	.....
1887.				
January	40,984 79	151,076 95	17,998 29	\$899 31
February	28,602 28	178,282 72	30,056 83	2,756 88
March	32,549 38	254,224 49	52,356 83	13,972 94
April	33,801 30	291,674 80	61,726 20	15,191 70
May	29,980 41	338,327 19	104,409 78	43,209 33
June	29,474 10	352,402 30	117,370 00	50,937 00
July	27,574 81	290,996 73	97,531 22	32,869 39
August	26,690 38	312,114 62	69,433 25	113,248 26
September	26,171 80	243,044 59	94,608 56	143,968 22
October	25,697 93	224,981 44	113,934 79	169,049 33
Totals	\$1,698,787 21	\$3,265,004 88	\$778,409 74	\$586,092 36

TWELFTH ANNUAL REPORT
OF THE
BOARD OF STATE CHARITIES,
TO THE
68th GENERAL ASSEMBLY OF THE STATE OF OHIO,
FOR THE
FISCAL YEAR ENDING NOVEMBER 15, 1887.

MEMBERS OF THE BOARD.

(Term of office, three years).

Name.	Residence.	Date of appointment.	Term expires.
Governor Joseph B. Foraker..	Columbus	President ex-officio.....	.....
Roeliff Brinkerhoff.....	Mansfield	April 23, 1884.....	April 22, 1890.
John G. Doren.....	Dayton.....	February 17, 1887.....	April 22, 1890.
John Beatty	Columbus	October 15, 1885.....	April 22, 1888.
John W. Andrews	"	April 23, 1885.....	April 22, 1888.
H. H. McFadden.....	Steubenville..	May 18, 1887.....	April 22, 1889.
William Howard Neff.....	Cincinnati....	April 23, 1886.....	April 22, 1889.
Secretary, Albert G. Byers....	Columbus	Appointed by Board ..	.....

Office: State House.

TITLE V, CHAPTER IV, REVISED LAWS, AS AMENDED
APRIL 15, 1880.

[O. L., Vol. 77, pp. 227-228].

SECTION 655. The governor shall appoint six persons, not more than three of whom shall be from the same political party, who shall constitute a Board of State Charities, to serve without compensation ; two of whom, as indicated by the governor, upon the fixed appointment, shall serve for one year, two for two years, and two for three years ; and upon the expiration of the term of each, his place, and that of his successor, shall, in like manner, be filled for the term of three years. The governor shall be ex-officio a member of said board, and the president thereof. Appointments to fill vacancies caused by death, resignation, or removal before the expiration of such terms may be made for the residue of terms in the same manner as original appointments.

SEC. 656. That the Board of State Charities shall be provided with a suitable room in the state house. Regular meetings of the board shall be held quarterly, or oftener, if required. They may make such rules and orders for the regulation of their own proceedings as they may deem necessary. They shall investigate the whole system of public charities and correctional institutions of the state, examine into the condition and management thereof, especially of prisons, jails, infirmaries, public hospitals and asylums ; and the officers in charge of all such institutions shall furnish to the board, on their request, such information and statistics as they may require ; and, to secure accuracy, uniformity, and completeness in such statistics, the board may prescribe such forms of report and registration as they may deem essential ; and all plans for new jails and infirmaries shall, before the adoption of the same by the county authorities, be submitted to said board for suggestion and criticism. The governor, in his discretion, may, at any time, order an investigation by the board, or by a committee of its members, of the management of any penal, reformatory, or charitable institution of the state ; and said board or committee in making any such investigation, shall have power to send for persons and papers, and to administer oaths and affirmations ; and the report of such investigation, with the testimony, shall be made to the governor, and shall be submitted by him, with his suggestions, to the general assembly.

SEC. 657. That the said board may appoint a secretary, who shall be paid for his services in addition to his traveling expenses, an annual salary of (not to exceed) twelve hundred dollars, as may be agreed upon by the board. All accounts and expenditures shall be certified as may be provided by the board, and shall be paid by the treasurer upon an order from the auditor of state.

SEC. 658. The Board of State Charities shall, annually, prepare and print, for the use of the legislature, a full and complete report of all their doings during the preceding year, stating fully and in detail all expenses incurred, all officers and agents employed, with a report of the secretary, embracing all the respective proceedings and expenses during the year, and showing the actual condition of all the state institutions under their control, with such suggestions as they may deem necessary and pertinent.

SEC. 5. This act shall take effect upon its passage.

TWELFTH ANNUAL REPORT.

OFFICE BOARD OF STATE CHARITIES,
COLUMBUS, OHIO, *November 15, 1887.*

To the Governor of Ohio :

The Board of State Charities is permitted to inquire into the condition and management of the charitable, reformatory and penal institutions of the State; to call attention to any abuses which may be detected, and to suggest remedies for such defects, either of law or administration, as it may find. That its supervisory efforts have been crowned with a fair measure of success is shown by the fact that the asylums under the immediate control of the State have been steadily advanced in usefulness, until they are now in every essential feature unsurpassed by those of any other section of the Union. Nor has the good work in progress been confined exclusively to the great asylums. The improvement in many county infirmaries and jails has of late been so marked as to encourage the belief that all will soon be brought up to the proper standard of excellence. The credit for this gratifying condition of affairs is not by any means wholly due to the Board of State Charities. Other agencies have had much to do with it, and amongst these may be mentioned the annual conventions or conferences of gentlemen whose lives have been devoted to philanthropic work; the books, periodicals and newspapers, in which the experience of the more successful in asylum and prison management has been minutely described; and the natural tendency of men as they advance in intelligence to give increased attention to those who by birth, accident, heredity, or unhappy surroundings are less fortunate than themselves. But good words, good books and humane impulses would accomplish little if there were not some persons of untiring energy to give them practical direction and effect, and the Board of State Charities has fortunately found in Dr. Byers, its Secretary, an indefatigable and successful organizer of charitable enterprise. He has been for years unceasing in his efforts to secure better accommodations for the poor, gentler treatment for the insane, and a more wholesome moral atmosphere for the imprisoned. It is a moderate statement of the truth to say that there is not an asylum, infirmary, work-house, or prison in Ohio which has not, time and again, been visited by him and in some respect benefited

by his presence and suggestions. His elaborate and valuable report for the current year presents a satisfactory summary of the affairs of the various institutions which the law has placed under the supervision of this Board, and to certain of the more important features of that report special attention is now directed.

I. The census of the insane discloses the fact that after all our asylums are filled to their utmost capacity, there will be 619 insane persons remaining unprovided for by the State. Of this number, however, 363 are reported as capable of performing more or less of manual labor, and these may be rendered both useful and comfortable in the county infirmaries.

II. The Children's Homes are doing excellent work, and as preventive agencies against pauperism and crime their importance can not be over-estimated. There are thirty-three County Homes reporting an aggregate number of 2,815 children provided for during the year. Of this number 515 were placed in families.

III. The financial exhibit of the benevolent institutions, as tabulated by the Secretary, shows for some of them a marked reduction in per capita cost of maintenance, while in others there is little, if any, increase. Upon the whole these institutions are in a very satisfactory condition. General healthfulness and more than ordinary contentment has prevailed.

IV. The infirmaries are gradually improving. The fact that there are 1,500 children in them shows that the law is not always regarded by county officers, and should therefore be so amended as to subject those who violate it to punishment.

V. There has been a marked reduction in the cost of keeping prisoners in the county jails, but the \$91,113.86 expended during the year, suggests that it would be well to establish more work-houses in which the petty criminals of the State could be made to contribute to their own support.

VI. The present management of the penitentiary is reported as reasonably successful, and expenses have been met. The work-houses of Cleveland, Cincinnati and Zanesville are mentioned as well-managed institutions. The reduction in the cost of keeping prisoners in jails is no doubt due to some extent to the fact that municipal and common pleas courts are sentencing misdemeanants to work-houses.

VII. Statistical tables have been prepared with great pains and labor, showing the entire population of our public institutions, the several classes provided for, and the financial operations of each institution for the year.

VIII. An attempt to collect statistics of the city police stations and village "lock-ups" has not been wholly successful. The results, however, are tabulated, and will be found worthy of consideration. The detailed statement by counties of the financial management of jails and infirmaries does not indicate a high order of business talent, but does suggest that such talent must be had before important reforms are accomplished.

The Board of State Charities, however, desires in this report to direct public attention—for the second or third time, perhaps—to things which should be done, rather than to those which have been.

1. Laws should be enacted to provide for the custodial care of adult idiots. It is folly to educate and support the immature imbecile, and then leave him free, when fully grown, to create a family to be reared at the expense of the State. If these unfortunates were subjected through life to a little gentle supervision and restraint, their number would gradually diminish, and the State be relieved, to some extent at least, of a disagreeable burden. On a farm of a few hundred acres, convenient to the Institution for Feeble-minded Youth, and under the same general management, the sexes could be kept apart, and this small class of our population maintained with little, if any, expense to the public, and certainly with more comfort to the imbeciles themselves, than under the most favorable circumstances they now enjoy. The fact that the plan here suggested would afford great relief to every infirmary in the State, should alone be sufficient to secure its immediate adoption.

2. The infirmary director is an unnecessary and expensive official, who consumes much time in the transaction of little business, and creates a division of responsibility in matters of expenditure and administration, neither profitable to the county nor conducive to the best interests of its poor. By abolishing the office which he holds, and assigning its duties to the County Commissioners, over \$40,000 per annum would be saved in per diem, and probably much more in other ways. At present, accountability for the care and maintenance of the poor is a shuttlecock played between two boards of public officers, and not allowed to abide long enough with either to be seen and located by the people. The tabular statement of the receipts and expenditures of the infirmaries for the present year, as reported to the Secretary of this Board, and published in his report, is a sufficient commentary on infirmary book-keeping under the present system. If the accounts were kept in the manner prescribed by law the disbursements and cash on hand would exactly equal the receipts, and so balance each other, whereas, as

reported, the large sum of \$226,255.41 is unaccounted for. Under a thorough system of accountability such a discrepancy could not occur in an official statement, especially when, as we doubt not is the fact in this case, the business has been, as a rule, honestly conducted. If the members of the General Assembly were to examine the reports made to this Board, and by actual observation ascertain how unsystematically and loosely the financial part of the business of infirmaries is transacted, and how frequently the plain letter of the law is disregarded, and how few checks there are against the waste of public money, the present system would either be abolished at once, or a law enacted providing for the appointment of inspectors, whose special duty it should be to make frequent investigation; to prosecute for willful violations of law, and to institute proceedings before the courts for the removal of incompetent infirmary officials and employes.

3. The poor-house, like the hospital, should be regarded as a temporary refuge of the citizen in the hour of his distress, and not as a permanent and legal home. Inmates should therefore be required to vote, if they vote at all, in the township, ward or precinct where they had a legal residence prior to the time when they became a charge upon the public. To an American the word *home* should always be suggestive of self-support, independence and thrift; and the charitable institutions of State and county should never become places for gathering in dependent voters with a view to utilizing them on election day for partisan ends. It is, to say the least, doubtful whether under existing law, inmates can ever acquire a legal residence in an infirmary, and we recommend that the question involved be set at rest by a specific act of the legislature.

4. So long as the office of trustee affords an opportunity to contrive expenditures for supplies and provide places for relatives and friends, unworthy men will struggle for it, and impair the efficiency of our asylums by their occasional success. To provide against this danger the law recently repealed, which divested trustees of trade patronage and precluded their relatives from appointment, should be re-enacted. This would secure the services of the best men, and remove one of the great temptations which now exist to divert them from an impersonal and disinterested discharge of official duty.

The most serious difficulty, however, which the people have had to encounter in the government of their public institutions has resulted, not from the business connections and private personal relations of Trustees, but directly from party politics and the instability of management to which it led; still there has been a great improvement

in this respect within the past ten years, and there is now a steadily growing sentiment in favor of emancipating the great public charities wholly from political thralldom. Governors are found independent enough to ignore party workers in the selection of Trustees, and Trustees, as a rule, are found high-minded and humane enough to think more of the unfortunate than of their own temporary popularity and political advancement. It is to be hoped there will be still further progress in this direction, and that the people who make such generous contributions for the relief of the distressed will see to it that the subjects of their bounty are not permitted to fall into new and inexperienced hands at every change which occurs in the political complexion of the State government.

5. Superintendents of high scholarly attainment and great skill in special lines, and trained corps of intelligent assistants, are indispensable, not only to the pecuniary success of our charitable institutions, but to the accomplishment of the beneficent purposes for which they were established. It is probably entirely safe and possibly necessary to leave with the Boards of Trustees full power to select chief executive officers; but it would certainly be well to subject all applicants for subordinate positions to rigid examination, and then, after a probationary appointment, place them in training schools to be organized in the asylums, where they will be thoroughly drilled in the special service to which, if found competent, they may be permanently assigned.

6. Public outdoor relief in cities should be abandoned. The money thus intended for the poor, although sometimes honestly and wisely expended, is nevertheless at all times too easily converted into a lever with which rings of unscrupulous politicians may move the idle, profligate and criminal. From the very nature of the means employed in its distribution, wholesome checks upon its disbursement, if not wholly impracticable, are certainly difficult to apply, and the fund, therefore, is often permitted to disappear in channels invisible to public scrutiny. The Board of State Charities has reason to believe that in all the larger cities, where this system of outdoor relief obtains, immoral and shameless women, and a greater number of less deserving men have been educated to look forward to its donations as the most reliable portion of their annual income. If the worthy poor, who are now supposed to be benefited by this method, were left entirely to the good offices of private charitable societies, they would be more certainly reached and more delicately and generously provided for.

7. Notwithstanding the additional accommodation to be afforded by the completion of the Asylum at Toledo, the buildings for the insane

will still be uncomfortably full, and some of the apartments necessarily occupied may, in mid-summer, become so heated as to endanger the health of patients. But this over-crowding of our benevolent institutions might be remedied during the summer months by the use of tents for those whose physical and mental condition would render their transfer to temporary shelters safe and feasible. In many instances, and probably in all, if the selection were judicious, patients would be greatly benefited by a change from the sombre walls of an asylum, of which they had grown weary, to the light, airy and cheerful shelter of a tent situated amid trees, shrubs and flowers; certainly those who continued in the old quarters would by this division of population obtain more room and purer air, and live for a time exempt from many annoyances inseparable from an over-crowded condition either in asylums or elsewhere.

As this expedient, however, would simply afford relief during the summer months, the Board desires to suggest that a permanent provision adequate to the demands of the insane at present and probably for years to come, could be made with a comparatively small expenditure of money by the erection of large dining-halls similar to those in successful operation at Athens, for one or more of the other State institutions. When these halls were completed and ready for occupancy, the numerous ward dining-rooms could be utilized for the reception and care of patients; and thereafter, instead of setting a family table in the room, now reserved for that purpose adjoining each ward, the patients would be conducted to general tables and fed with less cost for cooking, serving, and supervision than at present. Even if the suggestion respecting the use of tents should be adopted as an inexpensive method of breaking the monotony, and promoting the safety of asylum life, and affording an agreeable change to patients, a few large dining-halls should be built and the many smaller ones now in use assigned to such of the insane as are still, for lack of better quarters, subjected to the unskilled attendance and discomforts of county infirmaries.

8. The General Assembly has done well in providing for the humane treatment of prisoners, and in placing them under such influences as may tend to their reformation; but its care of the offender should not cease at the expiration of his term of service; on the contrary, he should be made to understand that the State is his friend, ready to stand by him in every effort he may put forth to earn an honest living, and it should see to it that he is relieved, in so far as this may be possible, from the discouragements incident to extreme poverty, and the bad characters whom an ignominious record are sure to gather about him if left unpro-

tected. It is far better, even in a pecuniary point of view, to spend a few dollars of public money in the effort to find the ex convict a situation in which he may earn fair wages and receive kind treatment, than to expend a much larger sum to secure his apprehension and conviction for a second offense.

But the convict is not the only person who should have special care at the hands of the law when he passes from under its immediate control. The inmates of the Boys' Industrial School, when dismissed, go out into the world without anything but their poor antecedents to recommend them. They are, therefore, received with coldness, regarded with distrust, subjected to insult, and too often forced into the companionship of vagabonds. The result is, that some who might be saved become violators of the law and drift into the penitentiary. This, however, bad as it is, is not the saddest illustration of the State's neglect of those whom it has undertaken to educate and qualify for usefulness. The inmates of the Girls' Industrial Home are now turned out at the age of eighteen, and abandoned to all the temptations which beset homeless, motherless and friendless girls. The Board of State Charities desires again to beg the General Assembly to at once make provision for the employment of an agent, whose duty it shall be to obtain suitable places for those discharged from the penitentiary and State reformatories, and, so far as practicable, aid the trustees of children's homes in placing their wards. In this connection, and with respect to the inmates of the Girls' Home, the Board would repeat, and, if possible, emphasize its former recommendation that they be diligently taught to perform skillfully all branches of household and kitchen work, so that their services may be sought by families in which competent help not only commands good wages, but obtains comfortable quarters and good associations.

9. There has been of late considerable discussion as to the various methods of employing convicts, and the disposition which should be made of the product of their labor. This has, so far, tended to disturb and confuse the public mind rather than to bring it to any definite and practical conclusion. One thing, however, may be regarded as settled. A majority of the voters of Ohio are firm in the determination that the ablebodied rogues of the State shall not become a burden upon honest industry. The penitentiary, therefore, must be made self-supporting. No law can prescribe intelligently as to all the details of prison management; much must, necessarily, be left to the discretion, experience and good business sense of wisely selected boards of managers. The less these are hampered in matters of detail the more certain they will be to work out good results both for the convict and the State. It i

obviously foolish and unfair to bind them to doubtful experiments, and fetter them with petty conditions, and then complain because they do not run a winning race.

10. Within the hours usually allotted to business the Governor of Ohio cannot attend to the manifold duties of his important office and at the same time hear promptly and decide carefully the numerous applications which come to him for executive clemency. Petitions for pardon are frequently presented or enforced by mothers and sisters who can neither be turned away nor requested to come at a more convenient season when other engagements are less urgent. If the man in whose behalf executive interference is asked be innocent, the State has been too long his debtor and oppressor, and should not only give him instant pardon, but hasten to make what reparation it can for the outrage committed. If he is guilty as charged, and the measure of his punishment is already equal to the gravity of his offense, justice should be prompt in ordering his dismissal. Even if he should be inadequately punished his honest friends, if such he may have, or, in the absence of such friends, his kinsmen, are entitled to an opportunity to be heard.

The Governor, as has been stated, is charged by the law with too many other duties to give that prompt and deliberate attention to this which its importance demands. We recommend, therefore, that the General Assembly provide for an Advisory Board of Pardons, whose duty it shall be to examine and report upon all applications for executive interference, and make such recommendation in each case as it may deem consistent with an impartial administration of justice. It should also be made the duty of this Board to investigate the prison record and antecedents of such convicts as the managers of the penitentiary may think worthy of being released on parole, and, with respect to these, its judgment as to conditional release or further detention should be final. To urge as an objection to the suggestions here made, that they would, if adopted, lead to a small expenditure of public money in the way of salaries, is equivalent to saying that the liberty and good name of a citizen of Ohio, unjustly imprisoned, are of little value, and that it is better that a few should be unduly punished and denied all rights which men value most highly, than that the many should be subjected to an almost imperceptible tax. This we submit would be a narrow view of a broad subject. Justice promptly and impartially administered begets respect for law, and security for life, and—let it cost what it may—is the best economy a State can practice.

The Board desires to acknowledge the courtesies of Railroad Companies, furnishing the Secretary with an annual pass over their respective lines within the State, as follows: Columbus, Hocking

Valley and Toledo Railway; Cincinnati, Washington and Baltimore Railroad; Columbus and Cincinnati Midland Railroad; The Valley Railway Company; Cleveland, Lorain and Wheeling Railroad; Cleveland, Akron and Columbus Railway Company; Lake Shore and Michigan Southern Railway; Cleveland and Marietta Railway; Toledo and Ohio Central Railway; New York, Chicago and St. Louis Railway; Baltimore and Ohio Railroad; Cleveland, Columbus, Cincinnati and Indianapolis Railway; Cincinnati, Hamilton and Dayton Railroad; New York, Pennsylvania and Ohio Railroad.

In conclusion, the Board desires to call attention to the following reports made by its committees, to wit: On law and legislation; On special care for the insane; On our Infirmary system, and on Prisons and Reformatories. It is believed these reports will be found to cover the several subjects suggested by their titles in a full and satisfactory manner.

JOHN BEATTY,
JOHN W. ANDREWS,
R. BRINKERHOFF,
WM. HOWARD NEFF,
JOHN G. DOREN,
H. H. MCFADDEN.

REPORT OF COMMITTEE ON LAW AND LEGISLATION.

The Committee on Law and Legislation recommend that, in order to carry out the suggestions of the Board, bills shall be prepared from time to time to be submitted to the General Assembly, as the committee shall deem best, providing as follows :

1 That assessors shall report the names, ages and sex of all insane persons, excepting those under public care in State or county institutions, stating, as far as may be, what amount of property, real and personal, such insane persons own, and who, in each case, has charge or possession of such insane persons and their property ; and copies of all such reports shall be sent by the County Auditor to the Board of State Charities, and to the Court of Probate of the proper county, and such action shall be taken by such court as may be necessary for the legal protection of such insane persons and their property.

2. Inspectors of insane and their condition in infirmaries, jails and private asylums shall be authorized to be appointed by the Court of Probate in counties where committees shall not have been appointed as provided by law ; such inspectors to examine and report as may be directed by the court, and to serve without compensation ; but the reasonable expenses of such inspectors and of said county committees actually incurred and certified by them to the Auditor shall be paid by the county.

3. Crimes and misdemeanors committed against the persons of the insane to be more severely punished.

4. No violent, dangerous, or exceptionally troublesome patient to be removed from a State asylum for the insane to an infirmary or jail unless absolutely necessary under the provisions of law, and in all such cases of necessary removal the least dangerous or troublesome patients shall be selected for such removal.

5. Temporary accommodation in tents to be authorized for the insane in asylums during the heat of summer, whenever, in the judgment of the Superintendent, the condition of the asylum may require it.

6. Ward dining-rooms to be utilized for apartments for patients, and new congregate dining-rooms to be provided separately for males and females, as may be necessary to meet the demand for increased accommodation.

7. Female physicians to be appointed, as far as may be, for female wards in asylums, and female attendants to be appointed by the court to accompany females sent to asylums.

8. There shall be an examination of all applicants for places as employes in insane asylums who, if found qualified, shall be received in the first instance on probation, as may be provided by law.

9. The power to release from an asylum temporarily on trial shall be defined.

10. Provision to be made for the custodial care of all idiots under public care not already provided for.

11. The act to amend section 629 of the Revised Statutes of Ohio, passed March 27, 1884, to be re-enacted, declaring who is ineligible as officer or employe of State institutions.

12. Outdoor relief to the poor in cities shall be abolished.

13. Inmates of infirmaries to be entitled to vote only in their places of permanent residence, the infirmary being regarded as a temporary resource and not as the permanent home.

14. The office of infirmary director to be abolished.

15. Cumulative sentences for misdemeanors shall be provided, and after the third and fourth offence the sentence shall be indefinite.

16. An agent to be authorized, to be appointed by the Governor, to aid in finding employment for discharged prisoners from the penitentiary and reformatories, and, as far as practicable, in finding homes for children from children's homes.

17. All plans for jails shall be required to be submitted to the Governor and approved by him.

18. Some mode to be provided for securing accuracy in accounts of jails and infirmaries, and other public institutions.

All of which is respectfully submitted.

JOHN W. ANDREWS,
R. BRINKERHOFF,
H. H. McFADDEN,
Committee.

REPORT OF COMMITTEE.

The committee to whom was referred the matter of the proper care and treatment of the insane by county and State authorities, and under State supervision, beg leave to report as follows :

The materials for such a report as is called for will be found, to a great extent, in the annual reports of the Board, and especially in those of its Secretary therewith published. They may be summed up, with some additional suggestions, as follows :

1. The insane should be subjected to the least possible physical restraint consistent with safety, and narcotics and drugs should not be used as substitutes for such restraint, but instead thereof the patients should have regular and daily work, and exercise in the open air as far as practicable, with good, plain food, well cooked and served, and with well ventilated, and well warmed and lighted rooms, and halls for exercise.

2. Patients should be treated uniformly with mildness, gentleness, and kindness, without threats, intimidation or repression, unless absolutely necessary in exceptional cases, and there should be no such thing as ruling them habitually by fear. Harshness and ill-temper in officers or attendants should be regarded as absolute disqualifications for their posts, and should be promptly dealt with accordingly.

3. There should be thorough supervision during every day, and at irregular intervals, of all wards and places where the insane are confined, with proper medical advice and treatment.

4. In asylums there should always be a female physician for female wards.

5. Newspapers, periodicals and books should be furnished to patients in asylums, and to all insane patients wherever they may be, and the sympathy and aid of all good citizens should be sought in contributions for these objects.

6. An additional insane asylum should probably be built at some future day for the eastern part of the State, at a cost not exceeding \$500 per capita, and thenceforth all needed accommodation for many years can be provided at moderate expense by annexes to existing institutions, for all insane patients, including dangerous epileptics. It is believed, however, that by a judicious selection of insane patients present demands will be met substantially by the opening of the Toledo asylum.

7. All attendants and employes of asylums should be systematically examined as to their fitness for the posts sought, and if found qualified, should be received on probation, before final appointment—and there should be no appointment or removal of any officer or employe on partisan grounds.

8. All insane, whether in asylums public or private, infirmaries, jails or private families, should be under the supervision and care of the State, and means should be provided by law to ascertain their number, location and custody.

9. Perfect cleanliness, and the best possible sanitary conditions should be insisted on in the treatment and care of all insane patients, wherever they may be confined ; but there should be no extravagant expenditure in buildings, furniture

or surroundings—nothing out of keeping with a moderate and economical style of living.

10. Superintendents and officers should be men of high character, and fully qualified for their posts. And in order to secure such men, they should be liberally compensated for their services. Low salaries are not necessarily economical.

11. Wherever hospitals for the insane are needed in county infirmaries, they should be so constructed as to be available for hospital purposes generally, after the insane shall have been otherwise provided for.

12. A woman attendant, appointed by the court, should always accompany a female patient when taken to an asylum.

13. Crimes committed against the insane should be specially provided for by law, and severely punished, and all property belonging to the insane should, by special enactments, be placed under the protection of the law.

14. In infirmaries and jails, there should be a thorough examination by boards of county visitors or other persons duly appointed for the purpose, of the condition and treatment of insane patients, as often as once in three months, and the results of all such examinations should be forthwith reported to the Court of Common Pleas of the proper county, and to the Board of State Charities, giving the judgment of the examiners as to the quality of the food and clothing of the patients, the ventilation, light, warmth, cleanliness and sanitary conditions of all rooms occupied by them, their treatment generally, and the names of the persons who have the charge of them, and are responsible for their treatment—specifying all neglect and abuses. In counties where no county board of visitors shall have been appointed, the court should appoint such examiners, who shall receive no compensation for their services; but the actual and reasonable expenses of such examiners and of boards of visitors incurred in the discharge of their duties, should be paid by the counties respectively.

15. Private asylums and all other places where the insane are kept, should be visited as often as once in each year, under the direction of the Board of State Charities, and oftener, if in their judgment it is expedient.

16. It should be distinctly understood that all insane persons, wherever they may be, are under the especial supervision and protection of the State, and that no neglect or abuse of these wards of the State will be tolerated.

All of which is respectfully submitted.

JOHN W. ANDREWS,
W. HOWARD NEFF,
R. BRINKERHOFF,
Committee.

REPORT OF COMMITTEE ON INFIRMARY SYSTEM.

The committee of the Board of State Charities, to whom was referred the subject of the revision of the infirmary system of the State of Ohio, respectfully reports as follows:

1. The complicated nature of our present method for the relief of the poor in infirmaries, and by outdoor aid, renders it absolutely impossible to avoid abuse and extravagance. The system should be simplified; responsibility made clear and direct; accountability rendered plain, simple, and complete; every consideration, except the public welfare, should be discarded. Humanity, good management and economy should be the cardinal principles of the policy adopted.

2. The authority is at present too much divided and too uncertain. After much reflection, and without any disparagement to those who now occupy the position, your committee is most decidedly of opinion that the public interest would be promoted by the abolishment of the office of infirmary director. If the appointment of the superintendent of the county infirmary is given to the county commissioners, where it rightfully belongs, and if the superintendent is allowed to appoint his subordinates, and is made responsible for their conduct, a great gain will be accomplished. As it is now, the authority is injudiciously divided. The superintendent does not appoint his assistants, and it is sometimes not in his power to remove them, while he is responsible for their behavior and management. No harm, in the opinion of your committee, can result from this change, but great good in every department. The saving to the State of the amount of salaries, and perquisites to the infirmary directors, which aggregates a very considerable sum, would be the least of the many advantages obtained.

3. Partisan politics should be eliminated from infirmary management. Inmates should be allowed to vote in the wards and townships from which they came. There they are known; fraud can be detected and prevented, and undue influence, which is sometimes carried to a surprising extent, would be prevented from accomplishing its purpose.

The tax-paying citizen chafes under the fact that the political control of the State of Ohio may rest with the inmates of the infirmaries, and the good sense of all parties should take care that by the above suggestion, or some similar method, this dangerous element may be rendered harmless; dangerous, not because poor men should not be allowed to vote, but because the inmates of the infirmaries when voting in a body, may often become tools in the hands of designing men.

4. Appointments should be made solely on the grounds of fitness and capability. The laws of the State of Ohio respecting participation in contracts, appointment of relatives, etc., should be re-enacted and extended to the county institutions. The purchase of supplies should be based upon the public interest, and not upon private friendship or personal benefit.

Vouchers should be presented to the county auditors in an intelligent and business-like manner, and the superintendent should be held directly responsible to the county commissioners, and they to the public for all expenditures.

5. The adoption of the foregoing suggestions would greatly tend to remove another difficulty of very serious dimensions. It is a notorious fact that through favoritism, reward for party services and private motives, many persons are admitted to the infirmaries who should not be there at all. In many cases they have friends quite able to support them, and oftener are able to support themselves. In the opinion of your committee, if this subject were intrusted to the superintendent, and he held directly responsible for his action, great good would be accomplished. Able-bodied persons, if admitted at all, should only be admitted temporarily to the infirmaries, and while there should be expected to work, either upon the farm, or at such indoor occupations as would be remunerative to the county. Pauperism should not be encouraged. In many cases temporary shelter or assistance is all that is needed. With good management the farm and kitchen garden ought to a great

extent to support the inmates. Kindness, good judgment, and judicious rewards would tend greatly to encourage industry and promote the happiness and welfare of the inmates. When the superintendent is made directly responsible for his institution, comparison with others, interchange of ideas in conferences, will greatly promote the efficiency of the institutions, and in this work the Board of State Charities can assist.

6. The treatment of the insane in the infirmaries is liable to great abuse. The Board of State Charities looks forward with pleasure to the time when all these unfortunates will be accommodated in the State institutions. Meanwhile, there should be no acute or violent cases admitted to the county infirmaries. Abuse of such persons is almost inseparable from the present construction and management of the infirmaries. Chronic and harmless cases only should be accommodated there. This classification can easily be made in connection with the State asylums, and it should be a grave misdemeanor for any officer of a State institution to send violent or acute cases to a county infirmary. Inmates should not be placed in authority over the insane, but competent attendants, male and female, should be appointed to this duty. Great abuses are likely to result from giving inmates charge over those deprived of reason.

7. After mature deliberation, your committee recommends the abolishment of outdoor relief throughout the State of Ohio. Private charitable associations in the cities are able and well qualified to discharge this duty, and until similar organizations are formed in the counties, the township trustees are very competent to attend to it. The abuses of the present system are great; its extravagance, its partiality, its misuse in political associations, its open encouragement of pauperism, confirm the committee in the opinion that it is best to abolish it. In the country districts, where cases are well known, it may be best to continue for the present, as above stated, under the direction of the township trustees, as an especial township tax, but even here local voluntary organizations will soon be formed when there is work for them to do.

8. The medical attendance on outdoor poor is a prolific subject for dispute, and under the present system is without responsibility and liable to abuse and extravagance. The employment of district physicians at a fixed salary by the county commissioners or State Board of Health, would be a great improvement.

9. While your committee believes that the adoption of the foregoing suggestions would greatly improve the infirmaries, render the unfortunate inmates far more comfortable, discourage profligacy and pauperism, it would be improper to close this report without stating that, in the opinion of your committee, one quarter of a million dollars (\$250,000), annually, would be saved to the State of Ohio, while the indirect saving would amount to a much larger sum.

The observations of the Board of State Charities during many years, the regular and systematic visits of our Secretary, the investigations conducted at various times, of which the testimony and the results have been widely published, have led your committee to these conclusions.

All of which is respectfully submitted.

WM. HOWARD NEFF,
R. BRINKERHOFF,
JOHN BEATTY,
Committee.

REPORT OF COMMITTEE ON PRISONS AND REFORMATORIES.

The subject of Prisons and Reformatories, submitted to your committee for report, is one which has received from the Board of State Charities larger attention, perhaps, than any other, but it is only in recent years that the recommendations of the Board have obtained legislative sanction to any large extent.

At the Fourteenth National Conference of Charities and Correction, held at Omaha, Nebraska, in August last, the Hon. F. B. Sanborn, of Massachusetts, Chairman of the Committee upon the Work of Boards of State Charities, stated in his report, that "in Ohio the Board has succeeded, with the aid of the Governor, who is ex-officio its chairman, in establishing the most complete prison system, in theory, which exists in the United States."

This is very complimentary, but yet, even if completed in fact as well as in theory, our Ohio system is by no means all that the Board of State Charities have recommended and pressed upon the attention of the Legislature during the past twenty years.

The seed sown during those years, however, has not been fruitless, and now that the harvest has begun we may hope there will be no hindrance to the gathering.

In his commendation of our Ohio system, as now established by law, Mr. Sanborn has reference mainly to that portion of it which grades our penitentiaries, and establishes the indefinite sentence and the parole of prisoners, together with our life sentence for incorrigibles.

The Ohio system, however, as recommended by the Board of State Charities, includes much more than this, and comprises not only the repressive methods referred to by Mr. Sanborn, but also the preventive measures which the Board has sought to establish, and which it deems of greater importance.

The Ohio system, therefore, as fostered by the Board of State Charities, begins at the beginning and seeks to save the children.

CHILDREN'S HOMES.

At the very beginning of its work the Board was impressed with the importance of removing children from the contaminating influences of our county infirmaries, and has never ceased to urge upon the Legislature the enactment of such laws as would remove all children from these institutions, and provide for their care and culture in county or private homes.

When the Board was organized in 1867, there were but two county homes in the State, viz., those in Washington and Montgomery counties. There are now thirty-three, and public sentiment is so pronounced in their favor that it is very certain that the time is near at hand when all the dependent children of the State will be provided for in this way.

In 1883, upon the recommendation of the Board that it should be made unlawful to maintain any children over two years of age in any county infirmary, an act was passed (Vol. 80, page 102) which provided "that on and after January 1, 1884, it shall not be lawful to place or maintain in any county infirmary, any child, except imbecile, idiotic or insane youths, who is eligible for admission to a county children's home, or other charitable institution."

This act, however, was amended a year later (Vol. 81, page 92) so as to except children in infirmaries where they are separated from adult paupers.

This legislation, whilst it greatly facilitated the removal of children from county infirmaries, has not entirely accomplished its purpose. First, because there was no penalty provided for a breach of its requirements; and secondly, because it permitted the retention of children under infirmary direction, upon the infirmary farm, provided they were separated from the adult paupers.

The result of these defects in the law is, that there are still remaining upon infirmary farms 1,612 children.

In several counties attempts have been made to separate the children from the adult paupers, but experience has shown that such separation is practically impossible, and even if it were not, the infirmary atmosphere and infirmary management are wholly unsuited to the proper care and training of children, and therefore the law should make the removal of children to a separate care imperative.

There are now thirty-three children's homes in the State in which, during the year ending September 1, 1887, 2,815 children have been sheltered, and in which there were still remaining 2,117. Twenty-eight of these are strictly County Homes.

The children's homes are all doing good work, but the statistics indicate that in some of them there is a lack of attention, or a lack of efficiency in placing out the children. A county home should never be considered anything more than a temporary shelter for children, in which they can be cared for until a permanent resting-place can be provided for them in private families, by indenture or adoption.

If the whole business of placing out, and of visitation afterwards could be placed in the hands of district agents, as has been heretofore recommended by the Board, we have no doubt much better results could be obtained, and the total expenditure for county homes could be largely reduced.

The County Home system is yet in its infancy, and its administration, doubtless, can be largely improved, but yet, for the prevention of crime by saving children, its results are of incalculable value, and every effort should be made to extend its beneficent care to homeless children in every county.

REFORMATORIES.

Among the instrumentalities for the prevention or repression of crime there are none more worthy of the fostering care of the State than reformatories for young offenders.

In this good work Ohio was one of the first among the States to lead off, which she did in the establishment of the Boys' Industrial School at Lancaster in 1858, and the Girls' Industrial Home in 1878.

Both of these institutions have done good work, and deserve large commendation.

There are, however, some defects which ought to be remedied. First, only children actually convicted of a violation of the criminal laws should be sent to either of these institutions, and even then, save in exceptional cases, it should only be for a second offense, as is now the case in England, where a reprimand or a birching is deemed sufficient for a first offense.

The reasons for this policy, as stated by Mr. Barwick Baker, the originator of the Reformatory System in England, are as follows:

"In most of the counties which first attempted the reformation of criminal children, the chief object sought appears to have been the conferring a benefit on each individual who was received, so that if fifty boys were so received fifty boys would be benefited. But in England, from the commencement of our small County Reformatories, a higher principle was adopted, viz., that by taking at first a limited area and receiving all the twice or three or four times convicted children, and removing them from the hitherto uncorrupted, we might prevent many from being led into evil, and thus where we received ten who had fallen we might save twenty from falling.

"This hope was far more than realized. Under the old system of committing boys to gaol time after time, even in those cases in which it was evident that no good result was produced, juvenile crime was steadily and rapidly increasing, and in 1856 the committals to prison of children under 16 in England and Wales had reached 13,981. In that year, however, a sufficient number of Reformatories had sprung up all over England to enable us to receive all children convicted for the second time or oftener, and the effect of this was that four years later, in 1860 the number of committals of children under 16 was reduced to 8,029; and, I t t me add, at the end of 22 years more, instead of a large increase on the number of 1856 the number has sunk, in spite of the increase in population, to 5,700, or less than half. The quality of the offences also was reduced even more than the quantity. Instead of nearly 14,000 convicted, of whom probably 1,000 were three or four times convicted, clever habitual thieves seducing, training, and leading many others to follow in their wake, we had little more than 8,000 weak children, most of whom had once, and a few twice, yielded to temptation, few of whom had the wish, none of whom had the skill, to lead or instruct others.

"This diminution of crime, greater and more distinctly traceable to a particular system than any other which I have heard or read of in our own or any other country, was clearly not produced by the reformation of the individual children received, because during those four years we had admitted less than a thousand a-year, but the reduction was at the rate of six thousand a-year; and also because few of those received had been discharged, and therefore it was not known or tested whether we had succeeded in reforming them or not. The reduction was due solely to the absence from the public of the infecting and corrupting element, or to speak more truly, the saving the hitherto innocent from the temptation of the companionship of old and experienced thieves, able and willing to

instruct and train them in crime. So far as we found, no boys were led or trained in crime by men; they were led and educated entirely by boys, and therefore when we by receiving every boy on a second conviction prevented any from attaining the practice and skill necessary for a leader, juvenile crime decreased as I have described, and for every child whom we received and had a possibility of reforming, five others were prevented from falling."

Mr. Baker, however, although he endorses the general rule of not admitting children to reformatories upon a first conviction, still thinks some exceptions might be made, as, for example, "when first convictions are for arson, placing stones on a railway, or for serious indecent assaults. Not that all these always betoken great depravity of mind, but that the consequences are so likely to be serious that a strong deterrent should be used to prevent them."

Again, we think no children under ten years of age should be sent to either of our reformatories.

As stated by our Secretary in his report of last year, "there are probably 200 boys, and a like proportion of girls in our State reformatories, for which these institutions were never designed, and whose commitment, by criminal procedure, involves incalculable wrong."

"Many children, some of tender years, others simply unfortunate from family connections or social environment, have found their way to these institutions, being first subjected to a criminal record, entailing a life-long disgrace, and then to associations every way hurtful."

This crime against childhood should be prevented, as far as possible, by a careful revision of the laws governing these institutions.

We think, also, these institutions should be more industrial in their methods for training their children than they are. In fact, they should be largely schools of technology, as is now the case in the Reformatory at Rochester, New York.

COUNTY JAILS.

Of all the public institutions in America the county jails are the most unsatisfactory, and our Ohio jails are not an exception to the rule.

Compared with other States we have, doubtless, made more progress than any other, but we are still so far behind the best experience of the world that we have but very little to boast of.

With less than half a dozen exceptions, every jail in Ohio is a moral pest-house, and a school of crime.

If there is any one thing upon which all penalogists are of one opinion, it is that a s should be simply places of detention for persons awaiting trial, and that every prisoner should be kept entirely separate from every other prisoner, so as to prevent the manifold evils of the present congregate system.

Fortunately we now have sixteen jails so constructed as to permit entire separation, and legislation ought to be enacted at once to make such separation compulsory.

Requirement should also be made for the submission of all jail plans for approval by the Governor, so as to make impossible the construction of any more congregate jails.

The probabilities are that the county jails, as a whole, can never be made what they ought to be until they are placed entirely under the control and management of the State.

WORK-HOUSES.

After trial, prisoners convicted of felonies should at once be transferred to the penitentiary, and those convicted for minor offenses, and sentenced for more than thirty days' imprisonment, should be sent to work-houses, either district or local.

In our judgment, district work-houses would be in every way preferable, and should be wholly under State control.

Work-houses, as now conducted, are far behind their possibilities, but still they are far preferable to the jails, for they are not positively evil in their results.

The greatest hindrance to the efficiency of our work-houses is the system, or rather want of system, by which a multiplicity of short sentences are inflicted for repeated offenses, so that a large proportion of work-house prisoners are recidivists, and many have been committed ten, twenty, thirty or even fifty times.

This system is worse than useless, for it not only does no good to the prisoners, but it inflicts a needless expense upon the tax-payers.

It is an old maxim, well known to all who have had experience of men under punishment, that a repetition of any punishment hardens the feelings and diminishes its terror. A repetition of short imprisonments is most mischievous. As stated by Mr. Barwick Baker, one of the wisest of penalogists, "it not only disposes the culprit himself to think little of a pain he has often endured and become used to, but it deprives the punishment of all terror (or deterrence) to his neighbors. When Bill has undergone a short sentence four or five times and still continues his old course, Tom, Dick and Harry can hardly be cowards enough to fear the same fate. Bill is a standing example of the inefficiency of the law to stop his course, and others are incited to follow him. If our object be, not the punishment of the past, but the prevention of the future crime, there is nothing so fatal to it as a repetition of any degree of punishment when the first has failed."

Upon this point there is no one in Ohio, or in the United States, better qualified to speak with authority than the accomplished and experienced superintendent of the Cleveland work-house, Mr. W. D. Patterson, who says: "After serving the sentence thus imposed, the prisoner, once free, goes out into the city again, and finds the same pit-falls and snares open before him or her, and they fall. The expensive machinery of the law is again called into requisition for their arrest, trial, conviction and imprisonment, and then the process goes on from day to day, week to month, and month to year, until, as the records show, the same individuals have been incarcerated in the work-house from one to thirty times for intoxication and other petty crimes, and yet while the offenses are multiplied and repeated over and over again, there is no increased penalty imposed for such violations of law. Such a system of penalties for violated law is little better than a *broad farce*."

The remedy for this condition of affairs is cumulative or indeterminate sentences, or both combined, supplemented by parole for good conduct and police supervision.

Mr. Baker says: "My own opinion has for long been, that where an offense is proved, and a previous conviction within twelve months is shown, the last sentence, whether of fine or imprisonment, should be doubled. Such a system would not be hard on an accidental offender, to whom a five days' imprisonment would not be severe, with a clearly defined knowledge that 10, 20, 40, 80 days, etc., would certainly follow a course of relapses, and would gently and by slow degrees show him that the law was stronger than he, and would be obeyed.

"Such a system would be perfectly intelligible to the public and the criminal; it would punish none without fair warning; and it would save many thousands from a life of misery."

Mr. Patterson recommends that "for the first offense the prisoner should be sentenced at the discretion of the court; second conviction should double the first sentence, both as to time and fine; third conviction double the second sentence, both as to time and fine; and, if after a third offense and conviction, there is no reformation, and the offender is convicted for a fourth time, then the indeterminate sentence should apply."

This recommendation of Mr. Patterson would seem to solve the problem fairly well, and if supplemented by the probation or suspended sentence, for the first offense, as now in operation in Massachusetts, and fully described in the sixth annual report of our Board, could not well be improved.

Possibly, for work-house recidivists, an indefinite sentence, with a maximum limit of five years, would be sufficient, and would obviate objections to the indeterminate sentence on account of its severity.

In England, for this class of cases, the usual sentence is two years of imprisonment, with seven years of police supervision, which is practically an indefinite sentence, with nine years as the maximum limit.

In the county of Gloucestershire, where this system has had the fullest trial, the effect has been marvelous in the reduction of crime, and similar results have followed elsewhere, wherever fairly tested.

THE INTERMEDIATE PENITENTIARY.

In the grading of our prisoners in Ohio, the most important step yet taken is the establishment of an Intermediate Penitentiary, upon the completion of which our whole prison system is dependent for its highest efficiency.

This prison is intended to be, as its name indicates, the connecting link between the penitentiary, the reform schools and the work-houses, and should be especially organized for the reception of young men under thirty years of age, convicted of felony for the first time, and should be held under the indefinite or indeterminate sentence.

The law defining its limitations, and providing for its organization and government, has not yet been formulated, and should receive early and careful attention, but the prison structure has been planned, and is now being completed upon the theory that it is to be a Reformatory upon the general principles of that now in operation at Elmira, New York.

Under our prison system as now in operation, fully one-fourth, and possibly one-third of the prisoners incarcerated in our penitentiary at Columbus are young men who do not properly belong to the crime class, and if kept apart from hardened criminals, and properly trained and disciplined could be largely saved.

On the other hand we have in the Reform School at Lancaster quite a large percentage of older boys so vicious in character as to exert a very bad influence upon their younger associates. All of these should be transferred to the Intermediate Penitentiary. So also from the work-houses, when organized on the plan we have proposed, many recidivists, under indeterminate sentences, could be transferred to the Intermediate Penitentiary.

It is apparent, therefore, that the Intermediate Penitentiary, organized as we have indicated, will fill a pressing want of our existing system.

In fact it is the keystone of that system which Mr. Sanborn has designated "the most advanced step yet taken by an American State," and its completion should be hastened as rapidly as the finances of the State will permit.

THE PENITENTIARY.

In regard to the old penitentiary, and its methods of dealing with the higher grade of criminals confined therein, there is hardly a sufficient lapse of time since the inauguration of the radical changes made by the laws of 1884 and 1885, to judge accurately of results. Upon the whole we believe those changes are a large advance upon previous methods.

Our law in regard to habitual criminals has already been adopted by Massachusetts and Illinois, and has been approved by penologists everywhere.

Our law in regard to the parole of prisoners is also watched with great interest, and thus far its results have been quite satisfactory, and as the methods of its administration are improved by experience, it will become a feature of great value.

As suggested by the Board of State Charities two years ago, we believe that before paroles are granted they should receive the approval of the Governor.

The classification of prisoners into three grades, and the educational opportuni-

es, offered by night schools, are also valuable features of the new system and should be carefully fostered.

What the penitentiary now needs more than anything else is a more experienced administration, which can never be attained until party politics are banished from the prison, and the only requirements for official position shall be integrity and efficiency.

The qualifications essential for the control and management of our public institutions are such as can only be obtained by long experience and study, and cannot be extemporized.

The officers in these institutions should be as carefully trained as they are in the army and navy, and promotion should come in the same way.

If our superintendents and directors are to keep abreast of the best experience of the world they must have every reasonable opportunity to obtain such information by visiting the best institutions elsewhere, and, especially, they should be encouraged to attend the annual meetings of superintendents in their own department of work.

We now have Annual State Conferences of Trustees, and Superintendents of Children's Homes, and also of Directors and Superintendents of Infirmaries, and no county can afford not to be represented in either of them.

So also with National Conferences of Charities and Correction, and the National Prison Congresses, from which no superintendent or warden can afford to be absent, and not to send them, instead of economy to the State, is really a large extravagance, for the losses, from want of knowledge which could thus have been attained, will often be a hundredfold more than the expenditure required to obtain it.

All of which is respectfully submitted.

R. BRINKERHOFF,
JOHN BEATTY,
H. H. McFADDEN.

REPORT OF THE SECRETARY.

OFFICE BOARD OF STATE CHARITIES,

COLUMBUS, O., *November 15, 1887.*

To the Honorable the Board of State Charities:

GENTLEMEN: I have the honor herewith to submit my twelfth annual report as Secretary of the Board.

The usual statistical tables accompany this report. Those of the several State Asylums will be found quite full, and we have been at great pains to secure accuracy in the numbers and classes of the several institutions, since their organization up to the close of the present fiscal year.

Another table prepared for advance publication on detached sheet, presenting an exhibit of financial operations for the year, with the movements of population in the institutions, including Longview Asylum.

The preparation of this table has been attended with considerable difficulty, growing out of the different methods of keeping accounts.

The blanks were made in form as plain as possible, asking the statement: first, of special appropriations, received and expended during the year with balances in State Treasury, and cash in hands of financial officers. The same exhibit of current expenses for the year was asked for with classified statement of expenditures, together with the averages and movements of population, as follows:

AVERAGES.

Daily average number of inmates on register of institution.....	
Daily average number of inmates actually in institution	
Average cost per capita, per annum, based on number of inmates on Asylum register, and total <i>receipts</i> from State Treasury for current expenses and salaries of officers combined	
Same, based on same number and including TOTAL <i>disbursements</i> for same purposes	
Same, based on number of inmates actually in Asylum, and <i>receipts</i> from State Treasury for current expenses and officers' salaries combined	
Same, based on same number and TOTAL <i>disbursements</i> for same purposes	

MOVEMENT OF POPULATION.

Number remaining November 15, 1886 .....	.....
Admitted during the year—First admissions .....	.....
Readmissions.. .....	.....
Born .....	.....
Total on records during the year .....	.....
Discharged during the year .....	.....
Died .... .....	.....
Escaped .....	.....
Remaining November 15, 1887—Male.....	.....
Female .....	.....

Of course some delay would necessarily follow in securing the return of these blanks, as the statistics and financial statements could not be made until on or after the 15th of November.

Most of the institutions were prompt in returning blanks, and some, nearly all of them, gave evidence of haste in their preparation, but two of them (Girls' Industrial Home and Athens Asylum) showing exact balances of numbers of inmates for the year, and of receipts and expenditures. In some instances discrepancies in the cash accounts could be easily adjusted, and such adjustments were made. This occasioned some labor and loss of time, but the chief annoyance grows out of the rather delicate duty of changing figures that come to us from financial officers of institutions.

It would seem easy enough to state the aggregate of appropriations for special purposes, and for current expenses, with amounts paid out of these funds respectively.

Certainly there should be no difficulty in giving the number of inmates for the year, with number remaining, and yet some of these reports could not be reconciled, and blanks had to be returned for revision.

The tables are presented in the following order:

- Statistical report of State asylums for the insane, marked A.
- Statistical report of the benevolent institutions, marked B.
- Statistical report of penitentiary and city work-houses of Cincinnati and Cleveland, marked C.
- Statistical report of reformatory institutions, State and municipal, marked D.
- Census of insane epileptics and idiotic inmates of county infirmaries, marked E.
- Classified statement, expenditures on account of current expenses and salaries in State institutions, marked F.
- Statistical report of children's homes, marked G.
- Classified statement of receipts for children's homes, marked H.
- Classified statement of current expenses of children's homes, marked I.
- Statistics of county infirmaries, marked J.
- Classified statement of receipts and expenditures, marked K.
- Classified statement of expenditures, outdoor relief, marked L.

Statistics of jails, marked M.

General summary, marked N.

Table showing location with description of buildings used as station houses and lock-ups, marked O.

Statistics of station houses and lock-ups for the year, marked P.

STATE INSTITUTIONS.

ATHENS ASYLUM FOR THE INSANE.

Trustees.

Theo. F. Davis,	Marietta ;	term expires,	1891.
H. M. Lash, M. D.,	Athens ;	" "	1892.
David M. Barrett,	Rainsboro ;	" "	1888.
John Sanns,	Gallipolis ;	" "	1889.
Horace M. Horton,	Pomeroy ;	" "	1890.

A. B. Richardson, M. D., *Superintendent.*

Robert E. Hamblin, *Steward.*

The management of the Athens Asylum is superior, just what might be expected from Trustees who devote themselves to the oversight of the institution, and from experienced officers co-operating to secure the best service possible, and the general comfort and welfare of those committed to their care.

Frequent visits during the year have impressed me with the fidelity of all connected with the asylum, employes as well as officers, to the one duty, that of bringing the asylum up to the full measure of its usefulness.

The financial exhibit of the Athens Asylum indicates the value of experience in financial management, and the importance of system in keeping accounts.

Mr. Robert E. Hamblin, as Steward, was one of the few officers whose financial exhibit for the year balanced.

The large dining-halls, after the trial of over another year, are proving every way satisfactory, as a domestic arrangement, quite convenient, and contributing largely to the reduction in cost of maintenance, as will be seen from tabulated reports, marked A.

CLEVELAND ASYLUM FOR THE INSANE.

Trustees.

John Tod, Cleveland;	term expires, 1891.
David L. King, Akron;	“ “ 1892.
James C. Johnson, Seville;	“ “ 1888.
John Zimmerman, Wooster;	“ “ 1889.
Ralph K. Paige, Painesville;	“ “ 1890.

Jamin Strong, M. D., *Superintendent.*

C. W. Deihl, *Steward.*

The management of the Cleveland asylum affords another lesson from which we learn the importance of retaining the services of experienced officers. Whatever differences of opinion may obtain as to the medical treatment of the insane, there can be no question as to the strict and constant attention to the details of financial, sanitary, and domestic management everywhere apparent in this institution.

On the evening of October 12, a disastrous fire occurred. Fully one-half of the patients were at the time assembled in the amusement hall, a large room on the second floor to the rear of the administration building, and well to the front of the boiler-house and laundry. The amusement hall was reached from the wards on either side by narrow hallways.

The fire originated from unknown causes in the drying-room. The first intimation reaching the hall in dense volumes of smoke, from which, before the patients could be removed, seven of them and one employe, Miss Mary Rice, lost their lives by suffocation.

The Superintendent, Dr. Strong, and assistants, Drs. Burton, Carpenter and Leonard, were self-possessed in the presence of this terrible disaster, and were largely aided by the attendants present at the time. Dr. Leonard, after dropping two female patients from a window, was obliged to secure his own safety by jumping after them. The direction of the wind at the time was toward the female wards, so that escape in that direction was rendered impossible, and the female patients had to be taken out through the narrow halls into the male wards, and thus returned to their proper places. The rear center building was practically destroyed, the lower part of the walls only remaining. These were of sufficient strength to support temporary shed-roofs, for the protection of the boiler-house and coal-cellar adjoining.

The laundry could not be even temporarily restored. The loss is supplied by a temporary frame structure, ordered erected at once by the Board of Trustees.

The buildings destroyed were old, and, as compared with other parts

of the building, quite dilapidated. To say that it was a mere tinder-box would be "a vain repetition" of a fact so fatally exemplified in its quick and utter destruction.

While the loss of life under such circumstances must be deeply deplored, there is no ground for reflection upon the officers of the institution, who are known to be vigilant in their care of the household, and in the presence of disaster did all that seemed possible to do. There is, however, culpability somewhere, that in view of so many disasters of the kind involving helpless humanity in their fatal results, and the urgent and oft-repeated appeals for fire-proof buildings, continues to neglect or overlook public interests so important. Another sad lesson has been taught, and the attention of the Board is once more called to the subject of fire-proof buildings, with the hope that the proper legislation may be secured.

COLUMBUS ASYLUM.

Trustees.

Henry Plimpton, Columbus;	term expires, 1891.
Aaron B. Robinson, Marysville;	" " 1892.
George W. Morgan, Mt. Vernon;	" " 1888.
Joseph P. Smith, Circleville;	" " 1889.
William Waddle, Chillicothe;	" " 1890.

* C. M. Finch, M. D., *Superintendent.*
George L. Currier, *Steward.*

The history of this asylum for the year has been marked by general quiet, good order, and a progressive system of medical treatment which, with an experienced care in the financial and domestic management will, doubtless, show satisfactory results.

Two suicides reported as occurring during the year on successive days led, upon the request of the superintendent, to an inquiry with a view to ascertaining whether there had been culpable negligence upon the part of officers or attendants.

By direction of the Governor, General Beatty, local member of the Board, and the Secretary, visited the asylum. Stenographic reports of the statements made were taken and are on file in this office.

The testimony was uniform as to the history of the individual patients, and of the manner of eluding the watch-care of their respective attendants.

The first occurrence was that of a female patient, Flora McCandlish, of Fairfield county. She was said to be very troublesome, from her constant disposition to run off. On the day of her death, to prevent

her from getting away, she had been sent back to her ward, and left there temporarily while most of the patients were out upon the grounds.

It was presumed that she was in safe custody, the ward doors being locked. Some repairs were being made within the ward, and a hod-carrier was passing in and out. It was thought that the patient thus passed out either with the hod-carrier, or that the door had been, in the absence of the attendant, left open; at all events the fact of her escape was soon discovered and pursuit made. The patient ran evidently with great speed through the grounds to the rear of the asylum until she reached the track of the I., B. & W. R. R., and was running westward on the track when a belated train, under speed, turned a curve. Nothing could avert the accident. Under all the circumstances it was nothing more than an accident—not a suicide. The patient had never manifested suicidal disposition.

In the case of a male patient, Charles E. Fish, of Huron county, occurring the following day, the fact of suicide was apparent. The patient eluded vigilance of an experienced and efficient attendant, secreted himself in the brush near the railroad track until the train approached so near as to render it impossible to avert the death, and threw himself upon the track.

So far as the inquiry was directed, including the superintendent, the ward physicians, supervisors, and immediate attendants of these patients, there seemed to be no want of attention, certainly nothing to indicate neglect of duty or of proper care, and the foregoing is a fair statement, in brief, of the conclusions reached.

The statement is embodied in this report as being due to officers and employes, who, under the best possible circumstances and the utmost fidelity to duty, are liable to indiscriminate reflections, and with a farther view to indicate that their conduct is under the scrutiny of the people of the State, who, in the care of the helpless and dependent classes, will tolerate no neglect or indifference to duty.

DAYTON ASYLUM.

Trustees.

Charles M. Godfrey, Ottawa;	term expires,	1891.
Henry L. Morey, Hamilton;	" "	1892.
Samual A. Baxter, Lima;	" "	1888.
Jacob Linxweiler, jr, Dayton;	" "	1889.
Joseph Clegg, Dayton;	" "	1890.

C. W. King, M. D., *Superintendent.*

J. L. Hughes, *Steward.*

Nothing untoward is known to have occurred in the general management of this asylum during the year. Social attention to visitors

(neglect of which was referred to in my last report) is no longer urged against the immediate management, and at the close of the year the house and household were in good order, and health, harmony, and general quiet prevailed.

LONGVIEW ASYLUM.

Trustees.

May Fechheimer, Cincinnati; term expires, 1889.
Wm. J. Coppock, Cincinnati; " " 1890.

The above named are appointed by the Governor, the three following by county authorities, towit:

Trustees.

John Zumstein, Cincinnati; term expires, 1888.
Theodore Marsh, Hartwell; " " 1891.
John A. Kreis, Cincinnati; " " 1892.
C. A. Miller, M. D., *Superintendent.*
H. Milton Foos, *Steward.*

The Longview Asylum has greatly improved its facilities within the past two years, and the foundations are now in place for an extension of the asylum building which will quite relieve the present crowded condition of the wards, and add considerably to the capacity of the institution.

The management of this asylum is admirable throughout. The proportion of chronic patients is perhaps larger than in the State Asylums. The medical care appears every way satisfactory, while the utmost economy consistent with the safety and comfort of the patients is apparent.

The experience acquired by Dr. Miller, and the efficient support afforded him by his assistant physicians, together with the intelligent supervision exercised by the Board of Trustees, secures to this asylum results highly commendable.

THE NORTHWESTERN ASYLUM

Is a county institution, under control and direction of county commissioners. A. B. Wright, M. D., *Superintendent.*

This institution is under the patronage of the State, and an average approximating one hundred patients is provided for under contract at \$4.25 per week.

The institution is neatly kept, and humane care exercised over the inmates.

The completion of the State Asylum at Toledo, will possibly obviate the further employment of the care hitherto provided in this asylum. That its accommodations may still be required, is, however, probable. If so, the better policy of the State would be to rent or purchase this property, and place it under the control of the State Asylum Board of Trustees. This would aid materially in the classification of patients, reduce cost, and above all give a legal status to the institution, which, under the past system of simple patronage, never existed.

A fire, originating in the drying room of the laundry, recently occurred in this asylum, which threatened great danger. By prompt and well directed efforts of the superintendent and employes, the fire was extinguished before communicating with the main building, thus averting what might have been an "added horror" to the burning of the rear portion of the Cleveland Asylum. Great praise is due Dr. Wright and his assistants for their heroic fight with the flames. The fire brigade and apparatus from the new asylum rendered efficient help in subduing the flames.

TOLEDO ASYLUM.

Trustees.

R. G. Pennington, Tiffin;	term expires, 1889.
W. E. Haynes, Fremont;	" " 1890.
J. W. Fuller, Toledo;	" " 1891.
D. W. H. Howard, Wauseon;	" " 1892.
J. H. Doyle, Toledo;	" " 1888.

H. A. Tobey, M. D., *Superintendent.*

Alfred Wilkins, *Steward.*

This institution has been from incidental and accidental circumstances delayed in its opening for the reception of patients.

Prominent among the causes of delay were the changes made during the year, in the methods of heating and lighting, natural gas having been introduced for the former and the Edison electric light for the latter. That these changes were clearly justified as in the interest of comfort and economy there can be little doubt, but the changes necessarily occasioned delay, and could not be made in the time previously calculated when the institution could be ready for the reception of patients.

There were alterations to be made in buildings already erected, and new buildings to be provided, roadways to construct, and innumerable details essential to the safe and proper equipment of the asylum, that

also required more time than could be fairly anticipated, so that at the end of the fiscal year (when it had been supposed that patients could be admitted) very much remained to be done, and the time that would still be required could not be definitely fixed.

The probabilities are that it will be toward mid-winter, certainly not until the early part of January that the institution can open its doors for the admission of patients.

The delay has been the occasion of a good deal of disappointment throughout the State, and in some instances of actual distress to those awaiting the accommodation which the asylum was expected to afford. Some of the causes of delay mentioned were unavoidable, but there were others growing out of the failure of contractors to meet their obligations, that might possibly have been avoided. There seemed to be unnecessary delay in lighting and in supplying bedsteads.

In addition to the incidental delays referred to, there was an accident resulting from a tornado, which injured some of the buildings to such an extent as required considerable time and expense for repairs.

The appointment of Dr. H. A. Tobey as superintendent has proved most fortunate, in bringing to the aid of the trustees highly valuable experience. Dr. Tobey has been assistant physician at the asylum in Columbus, and subsequently superintendent of the Dayton asylum. In addition to experience thus acquired, he brought social and professional qualities of a high order, and for such a time, and under such circumstances, practical mechanical knowledge, that has proved of the utmost importance.

In the equipment of the institution, and in supplying and manufacturing of articles for the domestic departments, Mrs. Tobey, the matron, has given unwearied interest, so that those who shall come to find in the institution either cure for their malady, or a care for their infirmities, will be provided with every comfort possible to such conditions.

INSTITUTION FOR THE EDUCATION OF THE DEAF AND DUMB.

Trustees.

J. M. Kirby, Upper Sandusky ;	term expires,	1891.
Rufus R. Danes, Marietta ;	"	1892.
James Scott, Lebanon ;	"	1888.
Jacob Cherryholmes, Millersburg ;	"	1889.
Frederick W. Herbst, Columbus ;	"	1890.
Amasa Pratt, <i>Superintendent.</i>		
J. S. Ellis, <i>Steward.</i>		

The present enrollment of pupils, 397, is in excess of the number enrolled at the corresponding period one year ago.

No special changes have occurred in the immediate administration, except the resignation of Miss Mary E. High, assistant matron, which occurred during the summer.

Miss High had filled her position acceptably for several years. Her health had declined, and, subsequent to her resignation, death ensued, causing profused sorrow to a large circle of friends, to whom her excellence of character, her fidelity to duty and efficient public service had greatly endeared her.

There is a question involving the discipline of pupils in our State benevolent institutions, to which it is deemed proper to call the attention of the board. It is not the peculiar fault, if fault there is, in the administration of the Institution for the Deaf and Dumb that unruly pupils are dismissed from the institution and returned to their homes, if they have homes to go to, or sent adrift regardless of consequences.

While dismissal from these institutions, any of them, should be resorted to as a last but not necessarily final measure of discipline, in the case of the deaf and dumb, the utmost care should be exercised, lest a life-long disability be imposed upon a class to whom education is so important.

No institution supported by public tax—not excepting our public school system—has so well repaid public expense and care in proportion to numbers, as the institution for the education of deaf mutes.

Of course, the interest of the many is to be carefully guarded against an undue sympathy for a refractory few.

An almost infinite patience is called for in the training of children deprived of the ordinary means of communication from which children who hear derive their earliest and best impressions of social and moral obligations.

These children come to the public institutions from homes where few, if any, restraints were imposed, and where their affliction has accustomed them to every possible parental indulgence. That they should be hard to control, that they will sometimes resist the exercise of authority, and occasionally commit flagrant wrongs, is not a matter of wonder. That these children should be subject to discipline cannot be questioned, but, that they should be summarily dismissed from the school, or that such a measure of discipline should be resorted to until every other means of bringing them into subjection has failed, cannot be in the interest of public policy—may add disgrace to misfortune and inflict an irreparable wrong upon children who, under a different discipline, might be educated and trained to a useful and happy life.

INSTITUTION FOR THE EDUCATION OF THE BLIND.

Trustees.

John L. Atwood, Ripley ;	term expires, 1891.
H. C. Drinkle, Lancaster ;	“ “ 1892.
John H. Hudson, Sandusky ;	“ “ 1888.
David L. Wadsworth, Wellington ;	“ “ 1889.
Edward Pagels, Columbus ;	“ “ 1890.
C. H. Miller, <i>Superintendent.</i>	
R. W. Bell, <i>Steward.</i>	

This institution has had a year of more than ordinary prosperity. General health has prevailed, harmony and co-operation among the officers and employes has contributed to quiet and good order in the household, and a prevalent contentment among the pupils.

The educational interests seem to have had the usual attention, while in the domestic management great improvement is manifest.

The financial management, under Mr. Bell, the present steward, has evidently been carefully looked after. In this institution, as in most others, there is a disposition to apologize for expenditures, and to make all possible reductions upon the current expense account, and to show as large daily average of inmates or pupils as can be made, with a view to reducing the per capita cost of maintenance.

The blank, referred to elsewhere, was arranged with a view to securing uniform reports from State institutions, and these have been tabulated upon a common basis, and in the briefest form possible that could show receipts and expenditures for the year, with any balances on hand, and existing liabilities. The per capita cost is based upon these figures, and the daily average number of persons provided for.

There are, doubtless, in each institution some peculiarities of numbers or expenses, known to the respective officers in charge, and these will, no doubt, appear in the separate reports of institutions, but could not be incorporated in a tabulated statement of all the institutions. It is presumed that the per capita cost will be reported by the several institutions upon such financial basis as they may regard equitable and just, but it does not follow that this expense, tabulated upon a uniform system, should exactly correspond with the same expense as calculated from different data.

For instance, Mr. Bell reports as a credit to current expense fund, \$2,100 for stock on hand. This is not a sum “received from other sources than the State treasury,” and could not be credited to current expense account without introducing a factor in the sum of expense that was not called for, and which other financial officers have not claimed.

INSTITUTION FOR THE EDUCATION OF FEEBLE-MINDED YOUTH.

Trustees.

Silas A. Conrad, Massillon;	term expires, 1888.
Robert Mehaffey, Herring;	" " 1889.
Benj. B. Woodbury, Chardon;	" " 1890.
Edward Squire, Defiance;	" " 1891.
Ross J. Alexander, Bridgeport;	" " 1892.

G. A. Doren, *Superintendent.*

George Evans, *Steward.*

This institution continues under the efficient superintendency that for many years has made it a model of systematic and progressive management.

Few changes occur in the help employed. Competent teachers acquire experience in the peculiar methods of instruction required, their service becoming more valuable each year, and as a result the system of education is thoroughly systematized and gratifying results are accomplished.

The general supervision by Dr. Doren, and the especial care of the domestic department, under the experienced direction of Miss Purple, secure to the institution the general comfort and order, which have in the past commended the management to public confidence and approval.

The new hospital buildings, one for each sex, and a new, large well-arranged dining-hall are under process of building, and when completed will, while increasing the capacity, add to the general safety and convenience of the household.

SOLDIERS' AND SAILORS' ORPHANS' HOME.

Trustees.

Charles H. Grosvenor, Athens;	term expires, 1891.
N. A. Fulton, Xenia;	" " 1892.
John S. Jones, Delaware;	" " 1888.
Andrew Schwarz, Columbus;	" " 1889.
Wm. G. Lyon, Newark;	" " 1890.

Major Noah Thomas, *Superintendent.*

George W. Harlan, *Financial Officer.*

This institution, somewhat disturbed one year ago, owing to the then recent change in its administration, has had more or less disquiet during the year, growing out of the suspense among officers and teachers, incident to a change of the Superintendent.

Quite a number of the matrons and teachers were removed, some of them after several years of service. The fact that no reason for some of the changes made, was known to exist, and as no reasons were assigned beyond the right of removal vested in the Trustees and Superintendent, created very naturally a feeling of dissatisfaction, and yet comparatively little complaint was heard, and the Home may be said to have had a prosperous year.

The capacity of the institution has been fully tested by the numbers accommodated, and besides the children in the Home, two hundred and six (206) have been provided for by the State in County Children's Homes, distributed as follows: Athens, 6; Belmont, 18; Butler, 12; Cleveland Aid Society, 2; Guernsey, 4; Licking, 1; Meigs, 7; Montgomery, 41; Richland, 17; Scioto, 12; Stark, 19; Tuscarawas, 23; Warren, 4; Washington, 28; Wayne, 12.

The financial management of the institution has no doubt received careful consideration, but the system of keeping accounts inherited from former administrations is quite complicated, and involves considerable difficulty in reaching a satisfactory balance at the close of the year.

There is also too little system in regard to the movement of population. It is well known that many of the children at the close of the school year go home for vacation of at least two months. Superintendent Thomas says, "about one-half," which would be from the whole number reported (674), 337 children which are in the Home but ten months. This would naturally affect the per capita cost for the year by reducing the daily average, and yet the report of the institution claims a daily average for the year of 674, and estimates the per capita cost upon the total current expenses exclusive of salaries. This, of course, makes a comparatively low rate, but it is not *the* rate of cost, the difference being that on the total number on register the cost would be \$138.55 on the number actually in an institution, the cost would be \$151.93, both estimates based on the "total current expenses for the year," and salaries of officers combined. This per capita cost may have been actually less, probably was, but in the absence of other data, we were obliged to make the estimate as stated above, and reported here in explanation of the tabulated statement elsewhere given.

Major Thomas and wife manifest great interest in their work, and evidently from a feeling of personal sympathy as well as from a sense of official duty.

WORKING HOME FOR THE BLIND.

Trustees.

H. De Crow, Galion;	term expires, 1889.
John O. Winship, Cleveland;	“ “ 1890.
E. J. Crane, Iberia;	“ “ 1888.

J. C. Tressel, *Superintendent.*

It is somewhat doubtful as to the real character of the Working Home of the Blind, as it sustains a peculiar relationship in the list of organized charities of the State. It was organized under State law, money was appropriated for its proper equipment, with a view to establishing a Home where the blind capable of performing skilled work could find a home and employment, and be assured of a competence for their support from the results of their labor.

It was the understanding with those who conceived the plan and urged the consideration of the General Assembly to the project, that after the institution would be fairly started no further aid would be asked from the State.

During the year, on the 20th day of June, the house and shop were formally opened, and the first inmates, quite a number, were admitted. Mr. J. C. Tressel, of Cleveland, was appointed Superintendent. He, with his family, wife and daughters, manifest great interest in the work, and seem well adapted to the duties of such a home.

We regret that no report of the financial operations, or movement of the population for the year, could be had in time for tabulation with other institutions.

SOLDIERS' AND SAILORS' HOME.

Trustees.

R. B. Brown, Zanesville;	term expires, 1891.
W. P. Orr, Piqua;	“ “ 1889.
Thomas T. Dill, Mansfield;	“ “ 1888.
Thomes B. Paxton, Cincinnati;	“ “ 1890.
Isaac F. Mack, Sandusky;	“ “ 1892.

This institution is conveniently located near the city of Sandusky on an eligible site, and will, in time, from its natural advantages, become an attractive place, such as the State may well afford to make it for men who, when the honor, integrity and perpetuity of our National Government was endangered, left home, and friends, and comfort, for the hardships of the field and the dangers of the battle.

The buildings are under contract and are being erected, but so slowly that no one may safely predict the time when the homeless, enfeebled and destitute soldier may find under its shelter the protection and care which the institution is designed to give.

From present indications another year will elapse, how much longer must be conjectured, before the buildings are ready for occupancy.

The Trustees are evidently anxious for the completion of this work under contract, but there seems to be little, if any, hurry upon the part of contractors, and the probabilities are that some who have been waiting the comfort and quiet of this home will go to their graves before it is finished.

OHIO PENITENTIARY.

This institution, owing to its political significance, rather than to public policy, is kept prominently in view, and its operations are scanned with propably more scrutiny than any other institution in the State.

Two years ago, upon the accession of the present administration to the government of State affairs, with but little change of law relating to its organization, an entire change of prison officials and guards was made, so as to bring the penitentiary under the immediate control of the party in power.

To those familiar with the nature and extent of responsibility involved, such changes of administration suggest little, if any, hope of real reform in prison management, but rather great liability from inexperience to retard such work. The changes made, while of a partisan character, were regarded as necessary to correct existing mismanagement, and justified by precedent. Under the existing law requiring appointments to be made from the several counties of the State, the change of administration was attended with difficulty. The selection of persons wholly inexperienced for positions requiring peculiar qualifications, upon the recommendation of local political organizations, or personal friends, becomes a formidable task, especially where two or more persons from the same county come equally well recommended, sometimes by the same persons.

FOR BOARD OF MANAGERS,

Happily a wise selection of men representing both political parties was made. Men of high social and moral standing and of superior business qualifications, who upon assuming their duties as a Board of Managers, seemed to be impressed at once with their duty to the State, while exer-

cising an intelligent and humane oversight of men adjudged as criminal, who, under their direction, were to be disciplined to obedience while being supplied with every incentive and aid to reformation of character.

Having been familiar for nearly a quarter of a century with the management of the penitentiary, I feel it due to the present Board of Managers, without any reflection upon preceding boards, to say that in the selection of officers, in the supervision of prison labor, in patient investigation of disciplinary measures, and in the exercise of official and personal interest in individual prisoners, the board has manifested an unusual interest and a wise discrimination in the discharge of its duty, that has brought the institution to a higher standard of prison management than was ever attained before.

The warden has developed more than ordinary qualifications for his position, attributing the success of his administration to the wise counsel and generous support of the Board of Managers and to the efficient co-operation of his deputy, W. B. Cherrington, and subordinate officers. This modest appreciation of his own service is possibly the best indication of a capacity to command the service of others.

EARNINGS.

Just what the financial operations of the year have been cannot now be stated, but it is probable that the earnings of the year have fully equaled the expenditures. If this end has been attained there can be no just ground of complaint.

No public interest demands a revenue to the State from prison labor.

PAROLE LAW.

The increasing care in the application of the parole law is giving indication of the wisdom of such law.

I am indebted to Mr. W. R. Phipps, President of the Board of Managers, for the following statement regarding the operation of the parole law :

PAROLE STATEMENT, ENDING SEPTEMBER 1, 1887.

Number of prisoners paroled since the passage of the act, May 4, 1885.....	254
“ discharged by expiration of sentence.....	92
“ “ “ Board of Managers (on general sentence).....	9
“ revoked	2
“ pardoned by Governor.....	4
“ died	5
“ refusing to accept parole.....	1
“ returned for violation of parole	10
“ *who have violated parole (five never reported)..	16

*Most of them violated their parole under a mistaken idea that they were only required to report for six months. Some of them have resumed their reports.

Very respectfu

W. R. PHIPPS,

Number delinquent in reporting.....		
“ reporting regularly..	112	
	—	254
Number of prisoners paroled.....		254
“ who had less than one year to serve.....	118	
“ “ “ more than 1 and less than 2	58	
“ “ “ “ 2 “ “ “ 3	23	
“ “ “ “ “ 3 “ “ “ 4	18	
“ “ “ “ “ 4 “ “ “ 5	7	
“ “ “ “ “ 5 “ “ “ 6	6	
“ “ “ “ “ 6 “ “ “ 7	3	
“ “ “ “ “ 7 “ “ “ 8	3	
“ “ “ “ “ 8 “ “ “ 9	3	
“ “ “ “ “ 9 “ “ “ 10	2	
“ “ “ “ “ 10 “ “ “ 11	2	
“ “ “ “ “ 11 “ “ “ 12	1	
“ paroled, general sentence.....	10	
	—	254
Number prisoners paroled.....		254
“ who have served more than three-fourths their sentence.....	124	
“ “ “ “ “ “ one-half “ “	58	
“ “ “ “ “ “ one-fourth “ “	31	
“ “ “ “ less “ one-fourth “ “	14	
“ “ “ “ general sentence	10	
	—	254

IDENTIFICATION OF PRISONERS.

The adoption, during the year, by the penitentiary management, of what is known as Alphonse Bertillon’s new method for the identification of criminals, by anthropometric descriptions, indicates the progressive spirit characterizing the present administration of the prison, and is another step in advance in securing protection of society against professional criminals. This system looks more directly to the detection of recidivists, and, when carefully applied, renders their identification as certain as can be made.

It consists of certain measurements and “notation of various bone dimensions which remain unchangeable on the same subject, and which are recorded in a uniform way. These are principally the stature or height of the figure, the length and width of the head, the length of the foot, middle finger, etc.”

The measurements are by the metric system and has, with its corresponding classification, been carried on in France for the past four years, during which time, from 1882 till April, 1886, eight hundred and seventy-three (873) criminals under assumed names were recognized.

Warden R. W. McClaughry, of the Joliet, Illinois, State Penitentiary, who presented this subject in a thoroughly comprehensive paper with practical illustrations of methods employed, at the late Prison

Congress, held at Toronto, Canada, quotes Mr. Bertillon as saying, that, in respect to the "identification of a criminal under an assumed name is, as far as the general welfare is concerned, equivalent to his direct arrest on the public highway for some other crime." Under the existing law of our State relating to "habitual criminals", the system of identification of recidivists—a second or third term—who appears under an assumed name, becomes a matter of the first importance. The method of taking measurements is entirely simple and expeditious—"an operation requiring two or three minutes of time, and within the range of the intelligence of an ordinary man". This system is now employed in our State Penitentiary, and has the approbation of the entire management, and will be carefully applied, and will no doubt, in time, yield satisfactory results.

BOYS' INDUSTRIAL SCHOOL.

Trustees.

James D. Brown, Athens ;	term expires, 1891.
Chas. H. Phelps, St. Mary's ;	" " 1892.
Wallace Lucky, Baltimore ;	" " 1888.
John G. Reeves, Lancaster ;	" " 1889.
Jonathan K. Rukenbrod, Salem ;	" " 1890.
Charles Douglas, <i>Superintendent.</i>	
Amos Levan, <i>Steward.</i>	

Considerable difficulty seems to have prevailed in this institution during the earlier part of the current year, growing out of appointments of subordinate officers, the Trustees being unwilling to confirm certain appointments made by the Superintendent.

At the close of the year these difficulties seem to have been adjusted, and at a recent visit harmony and good order were prevalent.

The educational, moral and military training of the boys, together with their industrial pursuits, mechanical, agricultural and domestic, continues about the same, and, in view of the frequent changes made in the immediate management, this is, perhaps, all that could reasonably be expected.

There is one department of education and training that seems to be overlooked. I refer to the social conditions of the institution.

These boys are always in groups ; at work, in field or shops, at school or study, at play or at prayers, marching or at meals ; they are always congregated in greater or less numbers. There can be but little directly personal attention given, so that it becomes very important

that the training of these boys in their associations should have the greatest care.

They cannot be permitted to talk in school; in the shop conversation would interfere with their employments; the play-grounds are not generally considered as conducing to a high order of social culture, study hours requires enforced silence, and after retiring to bed the utmost quietude must be insisted upon.

Why may not meal-time afford opportunity for conversation? Is there any more important feature of social education than table manners? Why should a system of signs with boys, endowed with speech, be employed in making known their wants at the table?

The only answer ever made to these questions has been that "if the boys were permitted to talk at the table they would turn the dining-room into a bedlam."

This, instead of an answer is, perhaps, the strongest reason that could be urged for teaching them proper behavior. Why these boys should be subjected to silence, after the order of a convict prison, is incomprehensible.

They should be patiently, and if need be, persistently instructed as to proprieties of the table, how to help each other, how to help themselves, and how to talk, and what is proper to talk about at the table. Table privileges might be made a source of disciplinary training, as well as of social culture. A boy that would, after having been instructed in better ways, persist in unruly behavior at the table, could be set aside from table privileges for a season.

One evil, now existing, could be remedied very readily by giving more attention to the table manners of these boys. There is a system of trading which seems singularly enough to be tolerated, that cannot otherwise than contribute to selfish habits and the breeding of contentions. It is the custom to give the boys pie on Sabbath for dinner, and at one or more meals during the week sweet cakes. With the proverbial fondness of boys for such delicacies on one hand, and the proclivities of other boys for driving sharp bargains, trades or "options" are being made, in anticipation of these dainties. I have seen a boy with as many as three pieces of pie, in addition to his own, at a Sunday dinner.

Inquiry developed the fact that this boy had traded during the week, giving something to be paid for in pie at the next Sabbath dinner.

The latter difficulty can, and no doubt will be, promptly corrected by the Superintendent. The former, giving the boys the privilege of conversation at the table, is regarded as impracticable; so was talking by cable across the ocean, regarded at one time, but the latter has been

achieved, and no doubt well directed and persistent efforts will eventually accomplish the former, and, if necessary to secure such effect, legislation should be invoked.

Mr. and Mrs. Douglas are doing their utmost to bring the institution to the highest order of excellence attainable ; any failure, if failure should occur, will certainly not be for want of earnest purpose or diligent labor upon their part.

Mr. Amos Levan, the Steward, has been a faithful and most accommodating officer.

GIRLS' INDUSTRIAL HOME.

Trustees.

John W. Watkins, Delaware ;	term expires, 1891.
Baldwin H. Millikan, Washington C. H. ;	" " 1892.
Bartholomew Tristram, Marion ;	" " 1888.
French H. Thornhill, Richwood ;	" " 1889.
George A. Hay, Coshocton ;	" " 1890.

J. M. Crawford, *Superintendent.*

Miss Anna M. Strauss, *Financial Officer.*

This institution, under its present management, is making substantial progress. Its accommodations are being enlarged by the erection of a new family building to accommodate fifty additional inmates and a new, neat, well-arranged and handsomely located hospital building.

The better indications of progress, however, are to be found in the improved and more practical methods of education employed, and the health and apparent contentment of the girls.

The financial management, the systematic methods of keeping accounts under direction of the Board, is largely the work of Captain John Watkins, Local Trustee and Secretary of the Board.

Every business transaction to the minutest detail is regarded as a public trust to be faithfully executed, and the most perfect system is pursued in keeping the accounts.

As an important result of this prompt and faithful performance of duty, the Board of Trustees met on Monday evening, November 14, by noon of the 15th, had their annual report completed, and at an early hour on the morning of the 16th laid it before the Governor.

The report of the Trustees is one of unusual interest, and will repay a careful study. It is a model of neatness and plain statement of financial affairs for the past year, and evidently well considered necessities

of the institution for the year to come. The report of the Superintendent is a plain, brief practical statement of the operations of the Home and its appropriate work, with some suggestions as to certain abuses with which the management has to contend. One of these has been heretofore brought to the attention of the Board of State Charities, and legislation in regard to it has been invoked. The wrong referred to is the commitment of young and inoffensive children under criminal proceedings to a reformatory institution where the association with older and vicious girls cannot be otherwise than hurtful.

The mention of such wrongs would seem sufficient to secure prompt legislation, forbidding such procedure under heavy penalty.

Having had frequent opportunities during the year for observing the management, it is a pleasant duty to record the devoted interest of the Superintendent and Matron, Col. J. M. Crawford and wife, and the hearty co-operation of those engaged with them in carrying forward the difficult, but most important work of the institution. This report would be incomplete, however, if it omitted to mention the very efficient service rendered by Miss Strauss, Clerk and Financial Officer of the Home. Her records and accounts are kept with the utmost accuracy, and her prompt, neatly executed and thoroughly accurate exhibit of the financial operations for the year has laid this office under obligations for which sincere thanks are tendered.

INTERMEDIATE PENITENTIARY.

Managers.

Francis M. Marriott, Delaware;	term expires, 1888.
B. F. Crawford, Mansfield;	“ “ 1889.
William Monaghan, New Lisbon;	“ “ 1890.

This institution is progressing as rapidly as the funds appropriated for its erection will allow. In view of its importance to a more perfect prison system for the State, any delay is to be deplored, and yet the fact that the enterprise has had a beginning and, that substantial progress is being made, is gratifying.

That a separate prison of a strictly reformatory character for first offenders, under thirty years of age, when the indeterminate sentence can be employed and the parole law fully tested, is a demand of our times, and is strictly in the line of public economy, and an advanced step toward reforming the administration of criminal law.

Such a prison is approved in the judgment of experienced prison

officers, is sanctioned by an enlightened public sentiment, and merits the favor of our own citizens.

COUNTY INFIRMARIES.

While there is some progress being made in the general management of our county infirmaries, and a marked improvement from year to year in the care bestowed upon infirmary households, with constantly increasing facilities for the comfort of the inmates and the convenience of the administration, there seems to be inherent to our infirmary system difficulties that, until a radical change is made in the law regulating infirmary management, precludes hope of accomplishing essential reforms.

It is needless to repeat here the difficulties referred to, when it is known that the public burden borne in the maintenance of county infirmaries is, for lack of competent business management, needlessly large; in some counties, regarded as oppressive; and when it is made plain that this useless expenditure of public money grows out of the complicated system under which the direction and management of infirmaries is organized, the public indifference to such conditions is rather remarkable.

There should be some *one individual* in each county charged with the care of the infirmary and the distribution of the poor fund.

This would, probably, in many counties, require the employment of a higher order of business talent or class of persons than have been heretofore employed.

In some of the counties the salaries, with the perquisites of the Superintendent's office, are already large enough to secure competent business men. In other counties the real retrenchment and public economy could be secured by paying competent superintendents a liberal compensation for the performance of their duties.

In some instances, under our present system, where competent men are employed as superintendents, and could meet every obligation of their office, they are hindered from so doing by the interference of Directors, who, under the present law, exercise administrative functions.

Some detail of reports, sent us during the year, will indicate the nature and extent of the difficulties.

This will be found, given in brief detail, under the heads of the counties respectively.

In submitting this detail it is possibly better to repeat here what has been so often said before in regard to Infirmary Directors—nothing personal as to their general intelligence or integrity, or to their official fidelity. They are honest men, and no doubt seek in the discharge of public duty to do what they conceive to be right, and for the best interests of their constituency and promotion of the comfort and care of the dependent and afflicted classes placed under their supervision. It is no disparagement of Infirmary Directors as men, nor is it a want of appreciation of their official integrity, to say that they are sometimes influenced by false ideas of economy; that they do not always comprehend the widely diversified duties and obligations of their office.

These are difficulties that occur in private as well as in public affairs.

The chief difficulty is in the laws under which our infirmary system is organized, and these laws should be revised promptly, and in conformity with practical ideas acquired from experience in the management of our county infirmaries.

By reference to the tabulated statement of financial management, it will be observed that the gross amount of receipts *reported* for the year by infirmary officers was \$997,117.27, whereas the reported total outlay was \$674,294.75, leaving unaccounted for the sum of \$322,822.52, as though it were in the hands of the officials. This is not presumable, and the general impression that figures won't lie is certainly in this case misleading, but the figures are given as reported, and the only fair way in all probability to account for the money is to say that every dollar of it is in safe hands, but that with so many people keeping accounts and sharing responsibility, it is not easy, as it ought to be, to determine who is accountable.

The statistical tables are more complete possibly, but not much more satisfactory than the financial.

They (the statistics of numbers and classes of inmates of infirmaries) are not regarded by county officials as being specially important, and evidently in some instances are given in "round numbers" rather than in exact figures.

This is the result of loose methods or indifference to the matter of careful registration of all persons received and all discharged from the infirmary.

A census of the insane population, taken on the 30th day of June, shows a total number of sixteen hundred; the annual statistical report

shows the same class of inmates to have increased to the number of 1,945.

The former number is probably the more accurate, but such a disparity of numbers suggests doubt as to the actual accuracy of either. There is evidently blame attaching somewhere, but under the complicated system of infirmary management just who is at fault is not easily determined.

The tables are submitted with the hope that they will at least be studied by those charged with the duty of a wise discrimination in the dispensation of public charity.

OUTDOOR RELIEF

Continues its heavy draft upon the public resources for relief without accompanying data indicating to whom and for what the outlay is made.

Eighty-three counties report an aggregate of \$370,281.61 expended for outdoor relief. Of the counties reporting this fund, the following make no mention of the numbers or classes of persons relieved, nor of the quantity or quality of the relief furnished, viz., Allen, Ashland, Ashtabula, Butler, Champaign, Coshocton, Erie, Fayette, Hamilton, Harrison, Huron, Lawrence, Lorain, Morrow, Scioto and Warren.

The following make no report whatever of this fund, viz., Logan, Morrow, Meigs, Mercer and Paulding.

The failure to furnish the latter in detail grows out of the fact that township trustees do not make their proper returns to the infirmary officials (indicating another complication of our system of poor laws), but there is no good reason why the total amount expended should not be known to the infirmary officials at the close of the fiscal year (September 1st), and ordinary fidelity to duty would demand that public money thus expended should be accounted for and promptly reported.

In some instances, of counties tabulated as reporting simply the aggregate, the sum was supplied by county auditors to whose courtesy this office is under many obligations. In a few instances, during the past year, efforts to supplement the reports of infirmary officers by blanks sent to county auditors met with no response, as will be seen from the tabulated statement.

INFIRMARY DIRECTORS.

The per diem and expenses of Infirmary Directors, as reported from seventy counties, amounted during the past year to \$43,236.36. Estimating the counties not reporting at the average cost per county the

sum would be \$54,354.08. This estimate does not include the Directory of the City Infirmary of Cincinnati, from which Board no report of any kind was received.

The report of the Auditor of Medina county which says, "the per diem and expenses of Infirmary Directors was \$6,362.32," is probably a mistake, which would reduce the aggregate, as tabulated, but as no other report was received, the sum stated by the Auditor was tabulated with a view to calling attention of infirmary officers to the importance of supplying accurate information as to their financial operations.

SUMMARY OF INFIRMARY POPULATION FOR THE YEAR ENDING SEPTEMBER 1, 1887.

Number remaining September 1, 1886.....	7,758
" received during the year.....	5,431
" born during the year.	233
<hr/>	
Total.....	13,422
Number discharged during the year.....	3,966
" placed by indenture or adoption.....	147
" ran away.....	229
" died.....	912
" sent to other counties.....	221
" " State institutions.....	313
<hr/>	
Total.....	5,788
Number remaining September 1, 1887.....	7,634
" under five years of age.....	673
" between five and sixteen years.....	939
" " sixteen and sixty years.....	5,966
" over sixty years.....	3,371
" between five and sixteen years, of sound mind and body.....	655
" insane.....	1,948
" epileptic.....	549
" idiotic.....	640
" disabled by age.....	1,754
" " disease.....	1,391
" crippled.....	154
" deformed.....	141
" blind.....	225
" of lying-in cases.....	238
" not disabled from any cause.....	2,585
" native birth.....	6,579
" foreign birth.....	3,218
" not having legal settlement in county.....	243
" " " State.....	106
Total current expenses for year.....	\$680,657 08

INSANE POPULATION OF THE STATE.

In view of the probable opening of the new asylum for the insane at Toledo, and the change made in redistricting the State for asylum purposes, I thought it proper to take a census of the insane in the several

county infirmaries and jails, and as nearly as possible ascertain the condition of those so reported. Blanks were prepared with this object in view and sent out to county infirmary officials. accompanied with the following letter :

BOARD OF STATE CHARITIES,

COLUMBUS, OHIO, *May 15, 1887.*

DEAR SIR: In view of the opening of Toledo Asylum for the Insane, which will occur, it is presumed, during the early fall of the current year, it is deemed important to secure an accurate and complete census of all the insane now under public care in the State. As the several county infirmaries are directly interested, the accompanying blank has been prepared with the hope that prompt attention will be given to filling the blanks and its return to this office by the thirtieth day of June next, filling the blank with the names, condition, etc., of all insane persons present in your infirmary on the thirtieth day of June, 1887. That there may be no confusion of classes, we will ask you to make out corresponding lists of all epileptic and idiotic persons separately, each class distinct. It would be well, probably, to have the infirmary physician make out the list on the day, and in the manner prescribed in the blank.

The following action was taken by the Board of State Charities at a meeting held on the fourteenth of April, and may aid your county commissioners and infirmary directors in determining future action in providing additional buildings, if such are contemplated, in your county.

“Resolved, That in view of the fact that the new asylum for the insane at Toledo will, during the present year, furnish accommodations for many of the worst cases in the infirmaries, and it is believed that a new asylum—as soon as the finances will admit of it—will be built in the eastern part of the State, which will nearly or quite meet present demands, the board would recommend to county commissioners, in making further provision for the insane in the counties, that they shall provide hospitals that will be of permanent value after the insane shall have been removed to the State asylums.”

The Secretary of the Board will gladly meet the commissioners of any county to consult in reference to this matter.

Your prompt attention will greatly oblige, yours,

By order of the Board.

A. G. BYERS, *Secretary.*

Most of the counties were prompt, others quite dilatory. Some seemed to appreciate the nature of the information sought after, and observed suggestions as to separating and classifying inmates and forwarded carefully prepared and intelligent reports. Others, from want of understanding or other forms of incompetency, rather than from indifference, returned the blanks in such a confusion of names, classes and conditions as to render their tabulation exceedingly difficult. The best results possible from the data furnished have been tabulated and are appended to this report, a summary of which is as follows :

Total number of insane, epileptics and idiots present in county and city infirmaries on the 30th of June, 1887, 2,433.

Of these there were admitted prior to 1870.....	246
“ “ “ 1880.....	406
“ “ since 1880.....	1,552
“ “ unknown	239
“ “ under mechanical restraint.....	166
“ “ locked in cells.....	685
“ “ violent and requiring constant care.....	567
“ “ filthy by day.....	19
“ “ “ night.....	216
“ “ “ day and night	373
“ “ laboring unattended	424
“ “ “ under attendants	244
Of the number laboring an average of 6 hours—attended..	311
“ “ “ 5 “ —unattended	186

The whole number is classified as follows:

Insane.....	1,600
Epileptic.....	387
Idiotic	446=2,433.

Taking the whole number reported, as summarized in the foregoing statement, it will be observed that about two-thirds of the entire number reported are insane.

It does not, however, follow that the proportions, as relating to the several conditions, will be in corresponding ratio.

The estimate may be safely made on the basis of two-thirds, and would then show as reported.

Chronic, probably incurable, having been in county infirmaries prior to 1870.....	164
Chronic, scarcely more hopeful, having been admitted prior to 1880	135
Admitted since 1880	1,034
Under mechanical restraint	55
Locked in cells	456
Violent, and requiring constant care.....	378
Filthy	248
Laboring, unattended	282
“ under attendants	81

Of course persons are duplicated, possibly triplicated, in this summary, as, for instance, the 378 reported “violent and requiring constant care,” would be included in the 456 “locked in cells;” the same figures would also include many, if not most of the reported “filthy.”

At the same date (June 30th) the following numbers were reported as being on the registers of the asylums for insane:

Athens, 876; Cleveland, 654; Columbus, 1,006; Dayton, 600; Northwestern, 120; making total number under State care, 3,256.

In county infirmaries and jails, 1,575. Total insane, June 30, 1887, 4,831, or an excess of numbers over asylum capacity of 821.

The capacity of the several State Asylums is estimated as follows: Athens Asylum, 850; Cleveland Asylum, 600; Dayton Asylum, 600; Columbus Asylum, 900; Toledo (when completed), 1,060; making total asylum capacity of 4,010.

The number reported from State Asylums on the 30th of June, in excess of the quotas from the several counties, aggregated two hundred and ninety-six.

This is the visiting list, or patients out for a probationary period. Some of these, perhaps fifty per cent., will return to asylum care, but there is no good reason, *if the law could be so amended as to legalize the procedure*, that a large list of visiting patients could be maintained, with relief to the asylums, with benefit to patients, and in many instances with great comfort to their families and friends.

The number of insane reported from infirmaries will bear some further analysis.

There are 363 reported as laboring from five to six hours per day. These may, without special hurt to public or personal interests, for the present, be left to the care of infirmaries, as they are generally comfortably provided for.

There are, however on the foregoing basis of calculation, 390 infirmary insane reported as "violent, and requiring constant care." From personal observations, I feel confident that this estimate of this particular class of insane is exaggerated—above rather than below—the number so reported. Of the total numbers of violent, including epileptics and idiots (567) far more than one-third of the 387 are epileptics, known to be of the class reported "violent."

But, regarding the estimate as entirely safe, it will be observed that this particular class of insane should by some means find speedy relief.

Very largely the violence of insane persons, confined in county infirmaries, results more from their treatment than from their deranged conditions. The narrow, hard and comfortless cells into which they are cast, the foul air they breathe, the absence of any special sanitary care of either the person or the place would exasperate any mind capable of appreciating its surroundings, and the measure of violence in such cases is limited only by the physical *debility* incident to their condition.

A further review of the figures discloses a total number of 373 filthy inmates. The estimate for the insane would be of the filthy class 124. This, too, is above the facts, as the larger proportion of the filthy inmates of our infirmaries are idiots.

This particular class of insane while under review may as well here, as elsewhere, claim the consideration of the Board.

Most of the neglect, and in many instances brutal abuses have been visited upon these poor senseless and helpless creatures.

It has been known to the Board, that until within recent years, few of the county infirmaries were supplied with bathing facilities, and, when year after year some attempt has been made to disclose these horrors, the immediate result was a temporary indignation of local authorities, that such exposure should be made, but the general result has been a steady diminution of numbers and an improved care of the filthy classes.

It is still, however, a sad truth, that quite a number of these helpless creatures are naked, locked in cells utterly comfortless, where straw is furnished for bedding and where less attention is bestowed upon them than is given ordinarily to stall-fed brutes.

There should be some provision in State Asylums for the care of this class of insane.

The State Asylums have every convenience. They have, or can have, trained nurses, and with such facilities the class of filthy insane, for whose comfort little else can be done, can be kept clean.

This fact is now clearly demonstrated in the Athens Asylum, where by the erection of infirmary wards, occupying the upper story of the new dining-halls, and the employment of night attendants, the number of the unclean has been reduced to a minimum and the comfort of all classes greatly promoted.

The foregoing figures do not represent the insane of Hamilton county, reported in the general statistics as provided for in Longview Asylum and the city and county Infirmaries. Including the insane of Hamilton county there was a total number of insane under public care in the State on the 30th of June, 1887, as follows:

In State Asylums	3,136
Longview Asylum.....	748
Northwestern Asylum (Toledo).	120
County	25
City and County Infirmaries.....	1,600
Total	5,629

The following may be stated as a fair proximate provision to be made for the accommodation of these unfortunates:

In State Asylums (including Northwestern).....	4,010
In Longview Asylum	700
Visiting from State Asylums.....	300
Laboring class in Infirmaries	363
Total	5,373

Deducting the above from the entire number to be provided for, there would remain to the care of County Infirmaries TWO HUNDRED AND FIFTY-SIX, or including the laboring classes as above, the entire number, remaining, for whom the State should make provision, would be six hundred and nineteen.

The erection of common dining-halls at one or more of the other State Asylums, such as are now in successful operation at the Athens Asylum, would meet at small cost the present demand, and, if adopted at Cleveland, Columbus and Dayton, would probably meet the prospective demands for the next decade of years.

Seven hundred additional patients could be thus provided for at a cost of not exceeding \$100,000.00, or \$143.00 per capita.

The census of the different asylum districts was made out from this office and sent to the several State Asylums, with a blank, asking that the quotas of the several counties should be furnished so that we might publish them for use in the respective counties. But one of these was returned and is as follows:

CLEVELAND ASYLUM.

Counties.	Males in hospital.	Male visitors.	Females in hospital.	Female visitors.	Total male and female.	Quota.	Excess.	Entitled.	New quota.
Ashtabula	15	.....	21	2	38	39	.....	1	50
Columbiana	29	1	22	.....	52	46	6	.....	66
Cuyahoga	91	.....	89	7	187	159	28	.....	264
Geauga ..	7	1	6	.....	14	17	.....	3	19
Lake	11	.....	7	1	19	19	.....	.....	22
Mahoning	19	2	16	2	39	37	2	.....	58
Medina	18	.....	11	1	30	24	6	.....	29
Portage	11	.....	24	.....	35	30	5	.....	37
Summit	20	1	27	.....	48	42	6	.....	59
Trumbull.....	30	.....	16	.....	46	46	.....	.....	60
<i>List of counties taken from the district.</i>	251	5	239	13	508	.....	.....	.....	.....
Lorain	20	1	19	2	42	36	6	.....	48
Stark	37	1	28	1	67	63	4	.....	87
Wayne	26	.....	18	1	45	42	3	.....	50
	83	2	65	4	154	.....	66	4	.....
Total number of patients on books, including visitors, Nov. 5, 1887...	334	7	304	17	662				

The following is a summary of the census of insane as reported by districts :

TOTALS.

Districts.	Number of—				Restraints.			Habits—filthy.			Labor.		Hours em- ployed.	
	Epileptic.	Idiotic.	Insane.	Total.	Sleeves, muff, etc.	In cell all or part of the time.	Violent and requiring constant care.	Day.	Night.	Both.	Unattended.	Attended.	Unattended.	Attended.
Columbus	90	126	331	547	11	168	104	7	26	60	94	48	6.4	6.1
Cleveland.....	55	82	499	636	94	141	141	1	111	64	106	71	5.5	5.6
Athens.....	54	78	152	284	5	78	48	1	16	43	69	37	5.8	5.
Dayton	58	36	263	357	22	113	98	5	39	56	58	16	6.	3.6
Toledo	100	114	305	519	33	178	166	2	22	122	60	69	6.4	5.1
	357	436	1550	2343	165	678	557	16	214	345	387	241	5)30.1 *6+	5)25.4 *5+

*Hours average.

The State, as now districted for asylum purposes with the respective quotas of counties under the new appointment, is as follows :

ATHENS DISTRICT.

Adams, 32; Athens, 38; Clermont, 49; Clinton, 37; Gallia, 38; Highland, 41; Hocking, 28; Jackson, 32; Lawrence, 53; Meigs, 44; Monroe, 36; Morgan, 27; Noble, 28; Perry, 38; Pike, 24; Ross, 54; Scioto, 44; Vinton, 23; Washington, 58.

CLEVELAND DISTRICT.

Ashtabula, 50; Columbiana, 66; Cuyahoga, 264; Geauge, 19; Lake, 22; Mahoning, 58; Medina, 29; Portage, 37; Summit, 59; Trumbull, 60.

COLUMBUS DISTRICT.

Belmont, 67; Carroll, 22; Coshocton, 36; Delaware, 37; Fayette, 27; Franklin, 117; Fairfield, 46; Guernsey, 37; Harrison, 28; Holmes, 28; Jefferson, 44; Knox, 37; Licking, 55; Madison, 27; Marion, 28; Morrow, 26; Muskingum, 67; Pickaway, 37; Tuscarawas, 54; Union, 30.

DAYTON DISTRICT.

Butler, 57; Brown, 44; Champaign, 37; Clarke, 57; Darke, 55; Greene, 42; Logan, 35; Miami, 49; Montgomery, 106; Preble, 33; Shelby, 33; Warren, 38.

EPILEPTICS.

There are at present under public care in Ohio, five hundred and thirty-eight epileptics. By the reports of 1886 there were 149 in State asylums for the insane. By the census of June 30, 1887, reported to this office, there were 387 in the county infirmaries and two in county jails, making a total of 538.

The nature of the malady from which these persons suffer would, if only it could be realized by the general public, demand and receive the utmost consideration, and every possible means for their comfort and happiness would be provided. That the people of Ohio should remain indifferent, can only be accounted for by their want of information.

Epilepsy is so frightful in its manifestations that few persons, who can avoid it, ever care to behold it.

It is regarded as involving hopeless conditions, and but little, if any, mitigation of its sufferings.

It is not, however, considered that very many epileptics in the interim of their seizures, possess a consciousness of their revolting and hopeless malady, and that such conditions claim the utmost of human sympathy.

That epilepsy involves the mind and renders irresponsible its victim, while periods of mental depression are more or less generally succeeded by high and ungovernable passion, resulting frequently in most shocking crimes—in other words, a disease which is a standing menace to the quiet of the home and to the good order and safety of society.

If these and many other considerations could be by some means impressed upon the Representatives of the people in our General Assembly, certainly other and better provision would be made than can be found in the ordinary county infirmary.

IDIOTIC.

The census of June 30th shows an aggregate population of idiots in county infirmaries of 446.

For the most part these are adult persons, and are subject to animal passions without judgment, or will-power of control.

That most of the cases of illegitimacy occurring in our county infirmaries are traceable to this class of people, is a well established fact, and if, for nothing else than as a check upon pauperism, there should be legislation placing the class under State care, where a proper separation of sexes and a classification of conditions could be maintained. The only practicable method of relief in this direction is to be found in the recommendation heretofore so often made by the Board, *i. e.*,

CUSTODIAL CARE

Of idiots under the direction and control of the Trustees of the Institution for the Education of the Feeble-Minded Youth.

This recommendation need not be repeated beyond mention of the fact that has been urged so often, and which is regarded as an easy, economic and every-way practicable solution of one great difficulty in our treatment of idiocy.

Heretofore there have been objections urged against the association of those requiring simply custodial care with the class of feeble-minded youth, for whose education the State makes provision. While the two classes could be brought under the direction and control of one administration, there is no apparent reason why, if really detrimental, the two classes should be brought into immediate contact.

The reasons for placing both classes under one administration are manifold.

1st. It would secure a proper classification.

2d. It would insure intelligent care in the custodial department, corresponding to the present educational advantages afforded in the school.

3d. Public economy, by avoiding the expense of administration buildings, and the organization and maintenance of a new and separate institution.

4th. Protection to those incapable of self-care or support, with corresponding protection to important, social and economic interests of community.

5th. Measureable self-support from well devised employment, with corresponding security and comfort of the individuals employed.

COUNTY INSTITUTIONS.

ADAMS COUNTY

Infirmary. The total current expense reported was \$3,420.93; total receipts, \$3,440.93, leaving balance on hand of \$20.

The management of the household is in good hands. With but few facilities, a marked improvement in the condition of the house and inmates is apparent.

THE WILSON HOME for children in this county is one of the best buildings for the purpose in the State, and is comparatively well furnished.

Since my last report, at which time the institution was under an experienced management and in the best possible condition, a change in the interest of party politics was made with the usual result of more or less disturbance of the household and considerable dissatisfaction to the public.

The Superintendent evidently regards the Home as fair spoils for partisan ends, and has limited ideas of the real object of the Home. His wife as matron, assisted by the daughter, are both of them happily adapted to the position and work; the house throughout indicated kind and intelligent care.

ALLEN COUNTY

Infirmary. No average cost of keeping inmates is given, the number of acres of land is omitted, and nothing whatever of outdoor relief is reported.

The children's department on the infirmary farm and under infirmary management is comfortably kept, and if this system of care for poor children is to be tolerated at all, no complaint can be made against Allen county. The law, in its spirit, however, contemplated the removal of children from infirmary association and influence more especially than from infirmary buildings.

The Home should be in or near the city of Lima.

ASHLAND COUNTY

Infirmary. Receipts reported exceed expenses by \$910.04. Outdoor relief not reported.

The immediate management of the house and household is quite improved and very good.

Ashland county is in need of a Children's Home. It is true that but few children are reported from the infirmary, but considerable destitution among children is known to exist in the towns.

ASHTABULA COUNTY

Infirmary. Great difficulty was experienced in securing return of blanks from this county.

The financial exhibit shows an excess of receipts over expenditures amounting to \$1,500.40; per diem and expenses of directors not reported.

The immediate management is in new and inexperienced hands, but the Superintendent and matron are evidently intelligent and well disposed, manifesting a purpose to meet their duties faithfully.

The children of the county are provided for in a Private Home at Ashtabula, organized under an association of young women in that town, who are greatly interested in the work, and are succeeding in making the Home quite comfortable and attractive.

ATHENS COUNTY

Infirmary. The financial exhibit shows a credit balance of \$8,908.85, or this sum of receipts in excess of the expenditures.

The Children's Home of Athens county is admirably managed, and is doing a good work. The enlarged facilities for the care of the children is evidently appreciated by Mr. and Mrs. Armstrong, Superintendent and matron, whose intelligent care is manifest throughout the house. The school in this Home is a model of order and thorough educational training.

AUGLAIZE COUNTY

Infirmary. The financial exhibit shows as follows: Received from county poor fund, \$2,244.32; from Dow law tax, \$8,624.93; other sources, \$822.70. This latter sum was paid into the county treasury.

The present management of domestic affairs in this infirmary, as observed during the year, is better than ever before.

The present site of the infirmary is regarded as unhealthy and the buildings are ill adapted for either convenience or comfort. The Commissioners have contemplated the purchase of another farm and the erection of new buildings. This would be certainly a proper thing to do, if a wise selection of location is made and suitable buildings erected.

BELMONT COUNTY

Infirmary. The statistical and financial report is given in detail, presenting a full and very satisfactory showing of the general management, and cannot be too highly commended. The County Visitors in their report say :

The general management of the institution is commendable. The superintendent is efficient, and the employes are, in a good degree, faithful.

The moral condition of the institution is in a more healthful condition than heretofore. Provision is made for regular religious service bimonthly, which is already bearing fruit.

The Board commends the insane and feeble-minded to the special consideration of those having charge of the institution.

It is with satisfaction that so favorable and encouraging a condition of things is reported.

CORRECTIONAL INSTITUTIONS.

The municipal prisons of the county are located at Barnesville, Bellaire, Bridgeport, Flushing, Martin's Ferry, and Morristown. They are in the condition as noticed in last report. Particular attention is directed to the one in Bridgeport, which is inadequate for the demands made upon it, and very unsuitable as a place of confinement.

THE COUNTY JAIL.

The Board, in its last report, refrained from saying anything on this subject, excepting that before the close of the year, a new jail would be erected. This expectation has not been realized. It need only be said, that the Belmont county jail is among the very worst in the State. Its general management and sanitary condition are as good as the adaptation of the building will allow. The erection of the contemplated new jail ought not to be delayed.

THE CHILDREN'S HOME.

This institution takes precedence of all others in the benevolent work inspired by Christian philanthropy. The inmates are children incapable of self-care, immature in judgment and wholly at the disposal of those placed over them. The relationship in which they are placed is artificial, if not unnatural. The home and family of which they are members is devoid of the natural endearments of home and family. The affections which they are expected to entertain and cultivate have no natural object to attract filial regard. Under these circumstances they enlist the tenderest sympathy, and should receive the most watchful care.

Attention is again called to the number accumulating in the Home who are not likely to be indentured. At sixteen years of age they will be discharged. They have acquired neither sufficient education nor any handicraft to render them self-supporting. Will the Children's Home become a feeder for the Infirmary? Shall the pauper ranks of the county be augmented from this source? This will undoubtedly be the case, unless some additional legislative provision be made whereby the children in the Homes of the State shall be provided with that which will make them self-supporting. This subject is commended to the Christian philanthropy of the county, to the board of state charities and to the legislature.

Respectfully submitted, this 31st day of October, A. D. 1887.

THOS. BALPH, *Chairman*,
MISS JANE EDGERTON, *Secretary*,
MRS. WILLIAM EATON,
MRS. ROSS J. ALEXANDER,
CHARLES E. KURZ, M. D.

BROWN COUNTY

Infirmary statistics are given in full. The financial report shows \$5,120.67 receipts more than expenditures.

The *Children's Home*, of Brown county, is located at Georgetown, the county seat.

The new building, a large two-story brick, is built after the plan of a Kentucky poor-house, and is poorly adapted to the purposes of a home for children.

The commissioners were at the pains, possibly to some expense, to find a suitable building with the result indicated above, but apparently overlooking the fact that a carefully prepared plan of building had been adopted by those fully competent to such task, and had been published and sent out to all the counties of the State.

Unfortunately in the erection of the building the drainage was quite imperfect, and, as a result, a serious sickness, involving the matron and several of the children, was prevailing at the time of my visit in October. The prevalent sickness and insufficiency of help gave the place a most cheerless appearance.

BUTLER COUNTY

Infirmary has during the year occupied the new, large and elegant infirmary building erected near the site of the old and overlooking the city of Hamilton.

This building, the exact cost of which could not be ascertained from the infirmary officials, is quite elaborate in its finish, the basement rooms being furnished with mantles and grates. Registers for hot air are placed in the floor. There are few, if any, closets and an ill arrangement of apartments throughout. The management seemed well enough. The superintendent and matron were absent at the time of my visit.

The financial exhibit for the year shows \$12,337.60 expenditures in excess of receipts. A total of \$2,047.54 is reported for outdoor relief, but no detail of the expenditure is given.

The children of Butler county infirmary are provided for in the Hamilton Home, a private, well conducted charity of the city.

CARROLL COUNTY

Infirmary reports receipts of \$4,750.36 in excess of expenditures.

CHAMPAIGN COUNTY

Infirmary reports \$1,384.73 more receipts than expenditures.

CLARKE COUNTY

Infirmary reports receipts, \$18,720.82; disbursements for current expenses, \$9,793; expended for outdoor relief, \$5,547, leaving a balance on hand of \$3,380.82.

This infirmary is among the better class of such institutions, and under an experienced and judicious management.

The Children's Home has been subjected to so many changes of the immediate management since its organization that no very satisfactory results could be expected.

The present management seems to be an improvement.

CLERMONT COUNTY

Infirmary. Financial exhibit shows receipts over expenditures of \$4,170.

There are thirty-five children maintained in this infirmary contrary to law.

The County Visitors, in their report of the infirmary, say: "The building is heated by steam, the boiler being under the front part, heating that part too much, and the rear part of the building, occupied by inmates, not enough."

A change of location of the boilers is recommended.

The committee also recommend "better drainage."

A lady in the double capacity of governess and teacher is employed for the care and instruction of the children, and a school-room in the third story "is fitted up" and is "a nice school-room." The committee commend the teacher and "the school," recommending "its continuance for nine months in the year." By what authority are these children kept in the infirmary? The commissioners of the county are required, by law, to make other provision for them.

They are not and cannot be kept separate from adult paupers. If the law is to be disregarded then certainly the recommendation of the County Visitors should be regarded. The Board of Visitors, speaking of the county jail, say:

"We found the building a close unventilated affair, floors rotten, and the whole building permeated with disgusting odors.

"We consider it unhealthy and an unsafe place to confine prisoners. * * *

"We consider it a disgrace to Clermont county, and it should be abated as a nuisance."

A new jail is recommended.

CLINTON COUNTY

Infirmary. Statistical report is full—the current expense account shows \$1,494.62 receipts over expenditures.

The *Children's Home* of Clinton county is quite crowded, but is under an intelligent and humane management.

COLUMBIANA COUNTY

Infirmary report is all right. Its statistics are complete, and its financial exhibit shows an exact balance.

This report indicates a possibility at least of keeping and rendering an intelligible report, and no end of labor and perplexity would be avoided if other counties would exercise the same care.

The children of this county, jointly with those of Stark county, are provided for in the Fairmount District Home, located near Mt. Union Stark county. This Home is well managed.

COSHOCTON COUNTY

Infirmary reports cash balance in current expense account of \$155.08. The sum of \$3,444.38 is reported as the total for outdoor relief; for whom or for what this money was expended is not stated.

CRAWFORD COUNTY

Infirmary financial exhibit shows \$4,625.99 more received than was expended.

CITY OF CLEVELAND

Infirmary. This is an unusually large, but well managed infirmary, rendering satisfactory account of numbers and classes of inmates and the cost of maintainance.

The balance to the credit of the infirmary on current expense account at the close of the year was \$48,077.90.

DARKE COUNTY

Infirmary received \$580.00 more than it expended.

There is a vast multitude of children kept during the year in this infirmary, not only in contravention of law, but of the expressed will of the people of the county, who, several years ago, voted funds for the erection of a county home.

The county officers have had difficulty in locating the institution, and personal preferences and local influences seem to secure more attention than the children whose necessities are certainly entitled to some consideration.

DELAWARE COUNTY

Infirmary financial report shows an amount of \$10 expenses over receipts.

The children of this county are comfortably provided for in the Home at Delaware, a private organized charity, under intelligent management.

ERIE COUNTY

Infirmary financial exhibit shows a balance of receipts over expenditures of \$21,358.58.

Five thousand eight hundred and thirty-five dollars and twenty-three cents is reported as total expended for outdoor relief; who was relieved, or how, is not stated.

The new infirmary building erected in place of the one destroyed by fire last year, seems comfortable and sufficiently capacious. It is apparently well managed.

DEFIANCE COUNTY

Infirmary reports receipts amounting to \$867.35 in excess of expenditures. Statistical report, including outdoor relief, is complete. Per diem and expenses of Directors not reported.

The Children's Home of this county is on the infirmary farm; the superintendent of the infirmary is also superintendent of the home.

The premises, buildings of the home, pertain to the infirmary farm, and the supplies are also derived from and are largely dependent upon the latter. An additional building has been erected during the year and will soon be ready for occupancy. This building will increase the capacity and contribute somewhat to the convenience and comfort of the home.

The immediate management of the home is under intelligent supervision. The school on the second floor in the home building is an inconvenient arrangement.

A competent teacher is employed and the children are carefully instructed. Here, as in many other institutions of the kind, too little consideration is given to the convenience of those who are charged with the care and responsibility of such households. Mrs. Gorgas, the matron of this home, in a paper on "Location and Buildings," prepared for the Convention of Children's Homes Officials held at Dayton, and read by request at the National Conference of Charities held at Omaha, presents the subject in the closing paragraph of the paper, as follows:

"In the arrangement of the house, primal consideration should be given to the care, comfort and culture of the children, securing these ends by providing the utmost convenience to the immediate management of the household. This involves building designs which may be readily appreciated, but in a brief paper may not be described. The many steps to be taken, the multiform duties to be discharged, the numberless attentions to be bestowed, the discriminating affection to be exercised, and the ever-present and always wearying anxieties incident to a household of little children who have been deprived of the affection, social sympathy and moral restraint of the ordinary life, is a stupendous task, the measure of which can only be known to an experience acquired under a conscientious effort to supply as nearly as possible these deprivations. This kind of home life approaches as nearly as possible to the ideal family life, and this *ideal* can scarcely fail to make deep and lasting impressions on the mind and heart of the child; these impressions once fixed are the best guarantee of a happy, prosperous and useful life, and constitute the best reward to such as devote their life and labor to the care and training of homeless children."

The location of the Defiance County Home is unfortunate in its proximity to the infirmary and its distance from the county seat.

FAIRFIELD COUNTY

Infirmary financial exhibit shows receipts in excess of expenditures on current account for the year of \$5,701.97.

The Board of County Visitors have been quite active during the past year. In their final report for the year, the Board say (in regard to the infirmary):

"The Board met at the infirmary on the 18th of November, more particularly to witness the workings of the new heating-apparatus. The work had been so far advanced as to enable the contractors to test it, and it was satisfactory to the Commissioners and the committee, as well as all concerned.

"The attention of the Board was directed to the bad condition of the sewage in the water-closets and bath-room. The stench in the bath-room was extremely offensive, and is certainly endangering the health of the whole household. The odor arising from this quarter of the building is liable to bring about an epidemic of typhoid fever or perhaps Asiatic cholera. Surprise was expressed that an epidemic had not already visited the institution. The plumbing was done sixteen years ago, and portions of the parts referred to have rotted away, the pipes become obstructed and otherwise very defective.

"A new and modern jail is badly needed in this county. The insecurity of the present structure is a source of great anxiety to the Sheriff, and multiplies his duties, it being necessary to observe the most diligent watchfulness and care. To better preserve and protect the health of the prisoners, good ventilation and light are necessary, as well as perfect sewage. These advantages are very meagre in the old jail, and there is no possible way of improving them, except by a new structure."

In regard to the Children's Home, the visitors say:

"The Board has become fully satisfied that a good work has been accomplished by the establishment of the Children's Home. While it may seem burdensome to some tax-payers, a visit to the Home will satisfy any one that it is certainly better for the community, and cheaper to train up these neglected and unfortunate little ones to soberness, industry, and usefulness, than to allow them to grow up in ignorance and in the midst of vice and degradation, and eventually to become confirmed paupers, and perhaps criminals of such institutions."

This general commendation is certainly merited by the Home of Fairfield county.

FAYETTE COUNTY

Infirmary reports expenditures over receipts of \$1,208.58.

The *Children's Home*, located near the county seat, is under an intelligent management.

FRANKLIN COUNTY

Infirmary shows receipts in excess of expenditures, amounting to \$1,943.52.

The immediate management is under experienced care.

The *Children's Home* of Franklin county is one of the largest institutions of the kind in the State, and is well managed; but with such a number of children as would certainly justify greater effort in securing permanent homes for the children.

FULTON COUNTY

Infirmary financial statement shows \$1,396.07 expenditures in excess of receipts.

Children are kept in the infirmary.

GALLIA COUNTY

Infirmary financial accounts make an exact balance.

The *County Home* for children, four miles from Gallipolis, is well managed.

GEAUGA COUNTY

Infirmary report shows an excess of expenditures over receipts of \$735.14.

GREENE COUNTY

Infirmary financial report shows receipts, amounting to \$6,103.46, over amount expended for current expenses.

The children are kept in a separate building under control of the *Infirmary Board*.

GUERNSEY COUNTY

Infirmary report receipts over expenditures amounting to \$7,198.21.

The *Children's Home* of this county occupied during the year the new Home building erected within the corporate limits of Cambridge, the county seat.

The location, buildings and present management renders this Home one of the best in the State.

HAMILTON COUNTY

Infirmary makes an intelligent and highly creditable financial exhibit, showing an exact balance in current expense account as taken from the published report of the Directors, a copy of which was sent instead of the blank by which statistics and financial affairs of the infirmery could be tabulated with those of other counties.

This method of reporting may have been quite convenient for the infirmery officials of Hamilton county, but occasions great trouble without securing satisfactory results when required to make the report conform to reports sent as requested from other counties. Per diem and expenses of Directors not reported.

HANCOCK COUNTY

Infirmary current expense account shows \$8,423.22 received in excess of expenditures.

Children are kept in the infirmery of this county.

HARDIN COUNTY

Infirmary financial exhibit shows \$5,830.38 received over the amount expended.

Children are kept in the infirmery.

HARRISON COUNTY

Infirmary makes a clean sheet in its exhibit of current expenses. For outdoor relief the sum of \$3,306 23 was expended; who got the money, or for what kind of relief, no report is made.

There are quite a number of children kept in this infirmery.

The Board of County Visitors, in their report for the current year, say :

1. We find in the infirmery ninety-six inmates, thirty-five of whom are under sixteen years of age, and twenty-nine of which are between the ages of five and sixteen. And inasmuch as the surrounding influences are detrimental to their proper education and development as good citizens, we earnestly recommend a *separate Home* for the county's children.

2. We find the matron of the institution burdened with care and responsibility beyond the power of any one person to execute properly, and believing that order, system and discipline are indispensable to the efficient administration of affairs, and which we *find very much wanting* in the institution, we advise that a matron be employed who should superintend both the culinary and wardrobe departments, and secure such assistants, to perform the labor, as shall promote the general welfare of the inmates.

3. Regarding it as the highest duty of a Christian administration to rescue and elevate humanity, we offer an earnest appeal for regular religious services to be held in the Chapel of the infirmary each Sabbath day, by neighboring ministers volunteering their services, also recommend that a Sabbath school be organized at least through the summer months.

4. We believe a valuable addition would be that of a library for the use of the inmates, which might consist of such second-hand books, periodicals and newspapers as would be interesting and profitable, contributed by those interested in the welfare of these unfortunates, and thereby add a ray of light to dull and monotonous hours.

5. We advise that a registry be procured for the names of all visitors, that there be specified times for the admission of same, and that the directors use proper measures to prevent the infirmary serving as a "*free hotel*", that, by so doing, we apprehend such retrenchments would largely or entirely meet any additional expenses as suggested.

The only corrective institution examined by us was the county jail, which we found without an inmate, and in good order.

D. B. WELCH,
WM. CROSKEY,
JUDITH E. JOHNSON,
MARGRET McCRADY,
MARTHA B. ROBINSON,
Committee.

HENRY COUNTY

Infirmary. The financial statement on current expense account shows receipts in excess of expenditures, amounting to \$7,410.42.

Statistics of numbers and classes of persons receiving outdoor relief is not given.

Children are kept in this infirmary

HIGHLAND COUNTY

Infirmary financial statement shows \$7,432.75, received in excess of amount expended.

This infirmary maintains its hold upon the poor children despite a well pronounced public sentiment in favor of other and better care.

HOCKING COUNTY

Infirmary current expense account shows \$2,232.06.

The children of this county are kept under infirmary control in a separate building on the infirmary farm. In this, as in several other counties, the impression seems to prevail that the law had nothing further in view than infirmary buildings, whereas it was the social and moral degradation that the law sought to remedy by requiring children to be placed in county homes, or kept separate from adult paupers.

The influence of the infirmary is unavoidable where possible contact of the pauper and the child is provided for.

The report of the county visitors speaks in commendation of the

present management of the infirmary. The report, also, takes a favorable view of the children's department, and says:

"The house we found well kept, the rooms well ventilated, beds and clothing clean, and in good order. The provisions which we saw indicated a good supply of that which is wholesome and nutritious, the supply of milk deserves special mention; but we found no water, except what was brought from the well at the infirmary. This deficiency, however, we understand, is to be remedied when the supply at the infirmary is procured. We found that the matron, her assistant and all the children sleep in the second story, to which access is had by only one narrow stairway. Should a fire occur in this wooden building in the night, the lives of all would be greatly in danger. It is the opinion of the committee that a practical fire-escape should be furnished."

Of the county jail the visitors say:

"We found things in good order. The cells are damp and very poorly ventilated. To this we call the special attention of the County Commissioners."

C. C. HART,
MRS. C. M. GOULD,
L. F. MITTLER,
Committee.

HOLMES COUNTY

Infirmary current expense account shows \$6,205.76 received more than was expended.

HURON COUNTY

Infirmary is under an experienced and more than ordinary intelligent management, the difference between receipts and expenditures on current expense account being \$900.98. Strangely enough, this county reports an aggregate of \$3,679.85 expended for outdoor relief, but not one item of detail is given as to whom or for what this public money was expended. The children of Huron county are comfortably provided for in a well ordered Home in the town of Norwalk—a private charity carefully administered.

JACKSON COUNTY

Infirmary current expense account shows a small amount of \$408.79 of receipts in excess of expenditures.

The children are kept in the infirmary of this county without any possible means of separating them from adult paupers.

JEFFERSON COUNTY

Infirmary financial exhibit shows receipts over expenditures of \$5,611.72. Children are maintained in this infirmary notwithstanding a vote of the people to provide a County Home. In this county, as in

others already mentioned, strange influences seem to be at work to frustrate, certainly to delay the performance of a public duty to which, in accordance with law, public approval has been given, and to which demands of humanity urge prompt action.

KNOX COUNTY

Infirmary current expense account for the year shows small balance of receipts over expenditures of \$314.03. Per diem and expenses of directors not reported. Children are kept in this infirmary, and an effort is made to keep them separate from adult paupers. A daughter of the Superintendent is employed as teacher. A room in the infirmary building is set apart for school purposes, and a separate yard and play-ground is provided.

The immediate management of the infirmary at the time of my visit during the year, was involved in rather serious complications, the matron complaining of the engineer as meddling unnecessarily with the administration of household affairs. Some difficulty subsequently occurred between the Superintendent and one or more of the inmates. The exact cause and nature of the offense is not known beyond the reported arrest of the inmate for violent assault upon the Superintendent.

LAKE COUNTY

Infirmary current expense account shows \$4,279.61 received more than expended. The infirmary building of Lake county is among the best of such buildings, and with possibly a few alterations, might be, for small counties, considered a model building.

LAWRENCE COUNTY

Infirmary current expense account showed exact balance.

For outdoor relief \$2,033.90 was expended during the year, but no detail whatever of this expenditure is given. The children of this county are provided for in a county Home, located in the city of Iron-ton. The building is of limited capacity. The immediate management, under Miss Lola Zell as matron, is quite commendable. The children of school age attend the public school of the city, and this method of educating the children is regarded as every way preferable to a school in the family.

LICKING COUNTY

Infirmary current expense account shows \$2,976.32 receipts over expenditures.

The *children* are provided for in the County Home near the city of Newark.

A new, elegant, quite capacious, well arranged fire-proof building for the Home is approaching completion, and its occupancy will meet an important public interest.

LOGAN COUNTY

Infirmary. Current expense account, as reported, shows \$3,720.60 received in excess of amount expended. No report of outdoor relief is made. Per diem and expenses of Directors not reported.

The *children* are provided for in the County Home. The new building, near Bellefontaine, is about ready, if not already occupied.

Of the adaptation of this building to Home purposes nothing can be said at present.

The presence of the children in the building will determine the question more satisfactorily.

LORAIN COUNTY

Infirmary. The financial exhibit of this county shows a total of \$1,107.06 expenditures in excess of receipts.

The total amount expended for outdoor relief was \$5,506.37; of this sum no detailed statement was given.

The children of Lorain county are kept in the infirmary contrary to law.

LUCAS COUNTY

Infirmary. The financial exhibit shows \$1,683.47 receipts over expenditures.

Lucas county has no Children's Home, but there is no apparent reason why children should be kept in the County Infirmary with several organized private charitable institutions in the city of Toledo, where the poor children of the county could be made comfortable and saved from the corrupting influences of the poor-house.

MADISON COUNTY

Infirmary. The financial exhibit shows \$129.93 receipts in excess of expenditures.

In this county also the law is being violated by the keeping of children in the infirmary. They report fifteen children under five years of age, and thirteen as being between the age of five and sixteen years.

MAHONING COUNTY

Infirmary. There is an exact balance of receipts and expenditures. No classified statement of receipts is given. Per diem and expenses of Directors not reported.

The present management is commendable.

MARION COUNTY

Infirmary. Receipts balance the expenditures.

No report of outdoor relief is given. Per diem and expenses of Directors not reported.

In this county, as in the foregoing, children are kept in the infirmary in defiance of law.

MEDINA COUNTY

Infirmary financial exhibit shows a total of \$7,556.12 receipts in excess of expenditures.

MEIGS COUNTY

Infirmary. Receipts exceed the expenditures by \$3,318.94.

No outdoor relief is reported.

The Children's Home of Meigs county, under the superintendency of Mrs. E. L. Bicknell, is well managed.

During the year a fearful epidemic of measles prevailed, prostrating over eighty children at one time, which included the entire household. A devoted care was bestowed, and but three cases proved fatal.

MERCER COUNTY

Infirmary. The financial exhibit shows a total of \$7,949.15 receipts in excess of expenditures.

No report of outdoor relief is given.

MIAMI COUNTY

Infirmary. The financial exhibit shows \$2,849.22 receipts in excess expenditures.

The Home for children in this county is nearly four miles from Troy, and is well managed.

MONROE COUNTY

Infirmary. Receipts balance the expenditures.

The amount reported as expended for outdoor relief is \$1,654.41; no detailed account of this sum is reported.

The County Visitors report a good management for the infirmary. They recommend better accommodations for the Superintendent's family; additional help for the care of the household is also recommended. The children of this county have heretofore been well cared for under private contract. The County Visitors speak in high praise of the care bestowed upon the children, and state further:

"The County Commissioners have recently purchased a small farm within the corporate limits of the town of Woodsfield, on which it is proposed to erect suitable buildings during the ensuing year for the more convenient and comfortable care and education of these helpless wards of the county. We heartily endorse and commend the provisions that are made for the comfort, care and education of these children, both on the part of the County Commissions and those whose duty it is to attend upon them."

MONTGOMERY COUNTY

Infirmary. Receipts balance the expenditures. Per diem and expenses of Directors not reported.

The *Children's Home* of this county is a well managed institution, accommodating a large number of children.

The children attend the public school of Dayton, with results entirely satisfactory to the management of the Home.

MORGAN COUNTY

Infirmary. The financial exhibit shows an excess of receipts over expenditures of \$356.22.

The Board of County Visitors speak in high praise of the management of the Children's Home of the county, and commend the management of the infirmary, but make the following recommendations:

A new laundry and better facilities for cooking. They also report the *jail* as empty but kept in good condition.

MORROW COUNTY

Infirmary financial exhibit show receipts in excess of expenditures, \$2,192.36.

The children of Morrow county are kept in the infirmary.

MUSKINGUM COUNTY

Infirmary. An excess of \$9,396.82 of receipts over expenditures is reported.

A very full and interesting report was received from the County Visitors, showing that marked attention has been paid to the institutions of the county and city of Zanesville.

Important reforms have been accomplished, and marked improve-

ments have been brought about under the intelligent and kindly supervision of this Board of County Visitors, whose report is quoted from in regard to the Zanesville work-house.

NOBLE COUNTY

Infirmary. The receipts are exceeded by the expenditures by only 13 cents. Per diem and expenses of Directors not reported.

Speaking of the infirmary, the Board of County Visitors say :

“ While your committee desires to speak plainly, and to condemn what it thinks wrong, it desires it to be understood that no blame or censure can be attached to either of said Superintendents. Your committee find that there are no baths in or connected with the infirmary ; that the sexes mingle together almost at will ; that there are five children of tender years in the infirmary ; that there are seven inmates who are insane or idiotic who mingle with the sane. There are quite a number of aged persons, most of whom are women. The fires kept and used in the infirmary are not sufficient to keep the inmates warm and comfortable in cold weather. It came to the knowledge of your committee that two paupers, a male and female, who were inmates, both young and healthy, went away and got married and then returned to the infirmary, and are now residing there as inmates. Your committee beg leave to recommend the following in regard to the infirmary : That the infirmary be enlarged in some way so as to furnish room for the inmates ; that the sexes be kept apart so far as the same can be done ; that said children be removed and placed in the Children’s Home ; that the insane and idiotic inmates be confined separately from the sane, or removed from the institution ; that warm woolen clothes and flannels be provided for the aged and infirm ; that sufficient fires be provided to insure the comfort of the inmates ; that the building is insufficient to provide a house for the Superintendent and his family and room for the inmates. And, finally, your committee recommend that all inmates, who have no just right to the benefits of the charity, be turned out, and their places supplied with the deserving poor. Your committee find that there are 39 children at the Children’s Home—27 boys and 12 girls. Amer Davis is Superintendent, and Miss Libbie Hartin is teacher.

Your committee was well pleased with the management of the Home, and think the superintendent and teacher should be complimented for their good work. Your committee is of opinion that the building used for the Home is wholly unfitted for that purpose ; that there is but one room in the building with fire in it that can be used by the inmates ; that the ceilings are low, windows small and bad ventilation ; that in case of fire the inmates could not be removed ; that there are no bath-rooms in the building ; that the Home is situated within half a mile of the Infirmary ; that the Home consists of 130 acres of land.

Your committee recommends as to the Children’s Home the following : that the farm be sold and a small tract of land in some suitable place purchased, and buildings suitable and proper be erected thereon, with such modern improvements as will insure the comfort and well-being of those little ones who, under the blessing of God, may become valuable members of society. Your committee finds that the girls and boys are not provided with suitable clothing for the winter, and recommends that flannel clothes be provided for them and woolen blankets for covering. They belong to the State in the sense that the State provides the charity that sustains them, and ought to furnish them the opportunities and surroundings to become good men and women.

Your committee visited, on two occasions during the year, the county jail, and found it, under the management of Sheriff Cleveland, clean and in good condition. During the last year the undersigned regret that they did not have the pleasure of

meeting with Mrs. Wm. Chambers, L. D. Finley and G. W. Taylor, the other members of the Board of Visitors.

All of which is respectfully submitted.

ELIZA MILLS.

RUTH OKEY.

OTTAWA COUNTY

Infirmary financial exhibit shows \$346.55 receipts in excess of expenditures. Per diem and expense of Directors not reported.

Children of this county are provided for in the infirmary.

PAULDING COUNTY

Infirmary financial exhibit shows a total of \$349.65 receipts in excess of expenditures.

Neither the current expenses nor outdoor relief are reported in detail.

The children of this county are kept in the infirmary.

PERRY COUNTY

Infirmary financial exhibit shows a balance of receipts over expenditures of \$5,210.12.

The report is complete, showing statistical and financial operations for the year.

The *Children's Home*, located near New Lexington, is under careful and painstaking management.

PICKAWAY COUNTY

Infirmary receipts balance expenditures. Per diem and expenses of Directors not reported.

The children of this county are provided for in a separate building on the infirmary farm, under infirmary management.

PIKE COUNTY

Infirmary financial exhibit shows a total of \$1,464.97 receipts in excess of expenditures.

The children of Pike county are provided for under special arrangement made by the Directors in the town of Piketon.

A new building for County Home is in process of erection at Waverly, the county seat.

PORTAGE COUNTY

Infirmary financial statement shows an excess of expenditures over receipts of \$2,661.84.

Children are provided for in the infirmary.

PREBLE COUNTY

Infirmary financial exhibit shows an excess of receipts over expenditures of \$2,863.02. Per diem and expenses of Directors not reported.

A pleasant, well-managed Home is provided for the children of this county near the town of Eaton.

PUTNAM COUNTY

Infirmary financial exhibit shows an excess of receipts over expenditures of \$1,483.29. Per diem and expenses of Directors not reported.

The children of this county are kept in the infirmary.

RICHLAND COUNTY

Infirmary, on current expense account, as reported, shows an excess of receipts over expenditures of \$13,939.76.

The *children* of the county are provided for in the County Home.

The location in the city of Mansfield is quite eligible, the buildings are capacious, the furniture seems rather scanty, and at the time of my visit there was some confusion in the immediate management of the household.

ROSS COUNTY

Infirmary. Current expense account, for the year, shows \$11,956.06 received over the amount expended.

The *children* are kept in the infirmary, and are as far as practicable separate from adult paupers. A school building separate, but adjacent to the infirmary, is provided and a teacher employed.

SANDUSKY COUNTY

Infirmary. Current expense, as reported for the year, shows \$351.55 receipts over expenditures.

Children (fortunately not many during the past year) are kept in the infirmary.

SCIOTO COUNTY

Infirmary current expense shows a clean balance. Of the \$2,979.72 expended for outdoor relief no detail whatever is reported. Per diem and expense of Directors not reported.

The *Children's Home*, of Scioto county, Miss McCord, Matron, is an admirably managed household.

SENECA COUNTY

Infirmary current expense shows small balance of \$144.28 receipts over expenses.

SHELBY COUNTY

Infirmary current expense account shows \$990.05 received over expenses.

STARK COUNTY

Infirmary expended during the year on account of current expense, \$10,260.80 more than receipts.

A new, well-arranged and quite comfortable building has been erected adjacent to the infirmary building for insane inmates and special help employed, so that Stark, with Miami and Mahoning counties, may be credited with a marked advance in the care of this particular class.

The children are provided for in the District Home, near Mt. Union. Stark county, jointly with Columbiana, sustaining the Home. Brief but favorable mention of the management has already been made. The County Board of Visitors, in their report for the year, say of the Home :

The appearance and manner of the children give satisfactory evidence that they are well cared for and contented. They look neat and clean, and give unmistakable proof of being properly fed. The general health of the children for the past year may be considered good. The condition of the rooms, furniture and bedding gave evidence of good housekeeping, creditable to the industry and judgment of the Superintendent and Matron, Mr. and Mrs. Niesz. The provision for educating the children will compare favorably with the village or country school. The elementary branches, in connection with arithmetic and geography, are thoroughly taught. In one of our visits we gave a close examination of the school department, and all were gratified with the proficiency exhibited by the pupils.

The visitors also very wisely recommend the following :

It would be well, in our opinion, were the Joint Board to engage a suitable person to canvass the country in search of permanent homes for the children. It should be understood that the institution is designed simply as a temporary home for children—to remain only until a permanent home can be secured. Without doubt, there are many well-to-do families, who have need of a boy or girl, and would cheerfully adopt one, were they properly advised on the subject. It should be understood that the institution is designed only as a temporary home, and that places of adoption for the children will be obtained as soon as can be, consistent with their future interest. By having a party out looking up homes, more children can be provided for, and in proportion, more accommodated at the Home. The institution is located in rather an out-of-the-way place, not conveniently accessible, and for that reason there are fewer visitors and a less number of persons who might be induced to accept an inmate with the view of adoption.

In regard to the County Infirmary the committee say :

In the several visits to this institution we found everything cleanly and in good order. The insane department is particularly to be commended; nor have the

dependent poor any just cause for complaint that we could discover. The objection made in last year's report to the authorities furnishing a holiday feast, to which many outsiders are invited, was disregarded.

Of the jail the same Board report as follows:

In the different inspections of the county jail we have always found the cells neat and clean. There is a lack of proper ventilation in the upper story, which should be remedied, if it can be done consistent with safety.

SUMMIT COUNTY

Infirmary on current expense account reports expenditures above receipts amounting to \$3,645.19.

The administration of the Summit County Infirmary was involved during the past year in a scandal, resulting from an insane woman giving birth to a child. A thorough investigation was ordered by the county commissioners, and subsequently changes were made in the immediate management, and additional facilities for the care of insane inmates were provided.

The children of Summit county are provided for in a rented building in the city of Akron. In this county, as in several others already mentioned, after a vote of the people authorizing the erection of a Home, the much needed provision is delayed for want of unity among those charged by law with the public duty of providing the necessary buildings. The purchase of a farm, that could be of little use, at some distance from the county seat, took the larger part of the money, and so the children must wait. How long? The county commissioners alone can determine.

TRUMBULL COUNTY

Infirmary. Current expense reported shows \$14,666.51 receipts in excess of expenditures.

The management of this infirmary, as observed during the year, is in good hands, and it was gratifying to find a sympathy with the Board of Directors for an over-worked matron. Additional help for proper care of the household was a marked necessity, for which the Directors expressed a desire to provide.

TUSCARAWAS COUNTY

Infirmary. Current expense reported shows that \$13,417.07 was received in excess of the amount expended.

The Children's Home is eligibly located, is provided with capacious building, and the management is well appointed.

UNION COUNTY

Infirmary. Current expenses, as reported, shows \$3,394.83 receipts above expenditures.

The Children's Home, near Marysville, is handsomely located, comfortably provided and well managed.

VAN WERT COUNTY

Infirmary. Current expenses for the year shows balance of receipts over expenditures of \$2,633.51.

The children are provided for in the county infirmary.

VINTON COUNTY

Infirmary. Current expenses reported shows \$2,721.67 received above the amount expended.

The children of Vinton county are provided for in a separate building adjacent to the infirmary, and quite convenient of access, so that easy intercourse can be maintained.

WARREN COUNTY

Infirmary. Current expense reported shows receipts of \$2,643.86 over expenditures.

No detail of outdoor relief is reported ; nor anything relating to per diem and expenses of Directors.

The Orphan Asylum and Children's Home, of Warren county, is located near the town of Lebanon. The building is not well arranged, but has sufficient capacity for the accommodation of the children, but no building of the kind should create a nuisance by placing the laundry in a central and occupied portion of the building.

Quite a controversy, local in its character, has been carried on for some time in regard to the immediate management. It is urged that the children are not sufficiently clothed nor properly cared for. The preparation of this report has prevented special inquiry and observation as to these complaints. Under the circumstances it is probably due to all concerned that the entire report of the Board of Visitors should be submitted.

REPORT

Of the Committee on the Charitable and Correctional Institutions of Warren County, Ohio, for the Year 1887.

The county of Warren has five places for the confinement of violators of statutory or municipal law, in addition to the county jail at Lebanon. These are located at Lebanon, Morrow, Mason, Franklin and Waynesville. They are small prisons,

usually "iron cages," with nothing within or in their surroundings to encourage a repetition of lawlessness, but they are sufficient for the purposes for which they are used, being rarely occupied by the same person more than twenty-four or forty-eight hours, and usually much less time.

THE COUNTY JAIL.

We have nothing specially new to report in reference to the county jail. We believe those who have charge of the building and its transient inmates are doing the best they can do in such a building. Within the last year the cells in the lower story have been made more healthful by removing the formerly damp brick floor, and placing in its stead a wooden floor.

The jail has also been supplied with a much needed bath-tub. Warren county officials are fortunate in rarely having to take charge of desperate criminals, otherwise the building would be found to be utterly insufficient for their safe confinement.

THE INFIRMARY.

In the last report of the board of visitors satisfaction was expressed with regard to the general management and care of the poor. We desire again to express our satisfaction as to these things, and our belief that many of the inmates are more comfortable, better provided for, and have a better home than for a large part of their previous lives. The rooms appear to be kept in as neat and clean a condition as could ordinarily be expected in such an institution, and the food sufficient and healthful.

During the past year a decided improvement has been made in the sanitary arrangements for the poor. We refer specially to the removal of the public water-closet farther from the main building, and the arrangements for cleansing the sewerage under the building for the insane. This improvement was so manifestly needed in the interests of our common humanity, that the county commissioners and board of infirmary directors promptly accomplished the work when their attention was specially called to it. But we are sorry to be compelled to report that another work, which was admitted to be as imperatively demanded, has not, as yet, been accomplished. We refer to the provision for the insane. In the report made one year ago we find this statement: "The provision for the insane separate from the other poor is not sufficient, necessitating the keeping of a number of this class with the other poor, to the great annoyance of the aged, the feeble and the sick." This is still true. For want of room in the insane building a number are kept with the other poor. Warren county has seventy insane to be provided for. Our quota in the State institution at Dayton is twenty-seven. By special arrangement we have had in that institution for some time thirty-one, being four more than the number to which we were entitled and liable to be returned at any time. There is in our county infirmary at the present time thirty-nine insane, and accommodations for only eighteen of the thirty-nine. Twenty are males and nineteen females. It is true we will find some relief through the new State asylum at Toledo, but still the present building will not be sufficient for the number we will have to care for.

But there is another feature of the present arrangement which we do not believe the tax-payers would permit to remain as it is, if they knew the facts, and that is the mingling together of the insane of both sexes. This cannot be avoided in the present building. Warren county is liable any day to be as deeply disgraced as some other counties have been within the last two years, but, in addition to this, insane women have to be cared for by men. Women will not go to such a place to care for insane women, and they ought not to be asked to go. The whole matter could be remedied by the outlay of a few hundred dollars. Ten, or at most twelve hundred dollars, would erect an addition to the present building sufficiently large for either the men

or women, and thus the sexes be separated and cared for by men and women from among the poor, without any additional expense to the county. We are well aware that the county commissioners feel the need of additional accommodations for the insane, and they have given assurance that provision shall be made, but weeks and months have passed and still the same state of things exists, and we feel that we ought to report the facts just as they are. Some such improvement as that reported would, also, remove the "incurables" from the low, damp hovel in which they are confined outside the main building.

THE ORPHAN ASYLUM AND CHILDREN'S HOME.

This institution is somewhat peculiar, being a combination of two institutions under one general management. This may account, in part, for the difficulty many persons have in understanding its financial arrangements and workings. The orphan asylum is to be maintained by the interest on a little over \$39,000, received from the Klingling estate, and a like sum from the county. The children's home is to be supported by tax. Any orphan child in the county is entitled to admission to the asylum. Any child in the county over two years and under sixteen years of age, who has no other provision for its maintenance, is entitled to admission to the home. Those admitted under the provisions of the asylum, usually embrace about three-fourths of those in the institution. This is not an *infirmary* or *poor-house*, and should not be so regarded and managed. We are assured that the financial provision for the proper maintenance of the institution is amply sufficient, and we believe that the children should be as well cared for as are the children of the average citizen and tax-payer.

We do not regard it as within our province as a board of visitors, to take notice of financial matters any farther than these may be essentially connected with improvements and changes that may be regarded as important to the welfare and safety of the children. We again feel it to be our duty to call the attention of the board to the danger to the building and its inmates from the location of the large boiler in the basement. The location of the boiler is dangerous, even if a competent person had constant charge, but especially so in view of the fact that the other duties of the superintendent demand almost his entire time. Besides, on the day of our last visit, we found holes in some of the steam-pipes, caused by rust, and other defects in the heating arrangements demanding prompt attention. The institution is not sufficiently supplied either with bed-clothing for winter weather, or suitable every-day clothing for the children. This, at present, is in part due to the large increase in the number of children admitted during the past few weeks, but an examination of the kind of clothing which has heretofore been used in the institution leads your committee to believe that it has not been suitable for winter wear, and, therefore, we suggest the propriety of a change in the kind of material used for fall and winter clothing both for boys and girls, viz., less cotton and more woollen, and in view of the season of the year, that this be done without delay. The present superintendent informed your committee that on taking charge less than two months ago, he was compelled to supply bed clothing from his own family bedding until sufficient could be furnished, which he assured us was being done as rapidly as possible with the help employed. Also, that as to food he had no means of knowing the variety and kind of food heretofore given to the children. We suggested some additions to the bill of fare shown to us. We are glad to report an important improvement in the sewerage made during the summer.

Your committee are not prepared to admit or deny the correctness of the very unfavorable comparison drawn by a member of the Board of Trustees of the Ohio Soldiers and Sailors Orphans' Home, who visited the home in the early part of October, in the interest of the orphan children of soldiers, as we have not the means of comparing the condition of this institution with others of a similar kind as he may have, but we do believe that immediate attention should be given by the board and

superintendent to the matters already referred to, and in doing so they may find other changes or improvements by which the asylum and home may the better accomplish the object for which they were established.

Respectfully submitted.

REV. JOHN P. SCOTT, D. D.,
DR. F. H. DARBY,
MRS. AMELIA L. LAMBERT,
MRS. HATTIE O'NEALL,
MISS ANNA K. MOUNTS.

WASHINGTON COUNTY

Infirmary current expense, as reported, shows \$2,576.27 received more than expended.

The *Children's Home* of Washington county continues its good work under the experienced and judicious care of Dr. D. D. Hart. This is the pioneer institution of the kind in our State, and has wrought out for the immediate community most important results, and largely influenced other counties in making corresponding provisions.

WAYNE COUNTY

Infirmary current expense shows receipts for the year to be \$8.129.13 more than the amount expended.

The *Children's Home* of Wayne county, near Wooster, is an admirably appointed and well managed institution.

WILLIAMS COUNTY

Infirmary current expense reports \$309.73 expended in excess of receipts.

No report is given of per diem and expenses of Directors.

Children are kept in this infirmary.

WOOD COUNTY

Infirmary shows a clean balance in its current expense account.

Quite a number of children are reported as maintained during the year.

WYANDOT COUNTY

Infirmary current expense account shows large receipts in excess of expenditures, the sum being \$10,163.19.

The per diem and expenses of *Infirmary* Directors is not given.

COUNTY JAILS.

The statistics of county jails is quite full.

Four counties do not report the cost of keeping prisoners, to wit:
Fairfield county. Because the subject of pay for keeping prisoners is in litigation.

Scioto county. Sheriff says: "I cannot get at the cost. Up to June 30th I had only been in office six months, and had to depend on nothing but jail register for what I sent you (numbers and classes of prisoners, etc.) I do not see how I can send you any more than I have sent you."

Perry county is building a new jail.

Carroll county. Regarding the cost of keeping prisoners, I. N. Davis writes: "It is impossible to answer these questions correctly, as the death of Sheriff Walt has caused the office to be changed so often during the year."

SUMMARY OF JAIL POPULATION

For the year ending June 30, 1887, as compared with the year 1886, is as follows:

	1887.	1886.	Increase.	Decrease.
Whole number males, 8,128 + 949=.....	9,077	8,573	584	.....
“ “ charged with felonies...	2,299	3,065	.....	766
“ “ misdemeanors	4,108	4,066	42	.....
“ “ violation of ordinances..	1,235	1,340	.....	105
“ “ sentenced to jail	1,285	1,644	.....	359
Average length of sentence (days).....	23	22	.....	.....
Number held for trial	1,644	2,332	.....	688
“ insane	660	523	137	.....
Epileptic	22	14	8	.....
Detained as witnesses.....	93	60	33	.....
Number under sixteen years of age..	231	149	82	.....
“ died.....	5	11	.....	6
“ escaped	47	46	1	.....
Total cost of keeping for the year	\$91,113 86	\$125,330 32	.....	\$34,216 46
Total expended for repairs	4,401 35	\$6,271 67	.....	.....
Number prisoners in jail June 30.....	765	951	.....	186
“ insane.....	25	23	2	.....
“ epileptic.....	2	3	.....	1

The management of the jails has continued to improve until jails showing neglect in their keeping have become exceptionally rare.

This is greatly to the credit of our Sheriffs, as in many counties an

approximation toward decency is hard to reach, and to maintain cleanliness means an unceasing warfare with darkness, dirt and vermin.

COUNTY VISITORS.

There seems to be a singular indifference to the law relating to the appointment of County Visitors. The importance of such service by local committees in the several counties where a judicious selection of persons is made is of great importance, and that they are aiding to bring about necessary reforms in local institutions is quite apparent.

Eighteen counties have Boards of Visitors, and from eleven of these reports have been received, all of them indicating efficient service upon the part of committees, and in most instances prompt response to these suggestions by county officials.

The necessary traveling expenses of these Boards should be provided for by law, after such bills have been approved by the court making the appointment of visitors.

Parts of the reports of visitors are given under the heads of the counties reporting to this office, and it is to be regretted that these could not be given in full, but some of the reports covering several visits made during the year would render this report too voluminous.

Thanks are due committees for copies of the reports.

Belmont County.

NAMES.	P. O. ADDRESS.
Rev. Thomas Balph.....	St. Clairsville, Ohio.
Mrs. Ross J. Alexander.....	Bridgeport, “
Mrs. Mary L. Miles	Somerton, “
Mrs. Thornton A. Rodefer.....	Bellaire, “
Dr. J. M. Blackford.....	Martins' Ferry.

Brown County.

Mrs. Eva Pearson.....	Georgetown, Ohio.
Mrs. M. J. Vandyke.....	“ “
Miss Lizzie Turner.....	“ “
Henry Brunner.....	“ “
A. M. Ellsbury.....	“ “

Clermont County.

Milton Jamison.....	Batavia, Ohio.
T. Q. Ashburn.....	“ “
Mrs. Carrie Kain.....	“ “
Mrs. Ida Roudebush.....	“ “
Mrs. Manorah F. Lowe.....	“ “

Cuyahoga County.

J. W. Walton....	Cleveland, Ohio.
F. Jennie Duty.....	“ “
Mary E. Crawford.....	“ “
Estella G. Cunnea.....	“ “
James Lavan	“ “

Darke County.

Dr. I. N. Good.....	Greenville, Ohio.
Mrs. J. E. Matchett.....	“ “
Mrs. Mary Jane Turpen	“ “
Mrs. Priscella Allen.....	“ “

Fairfield County.

Dr. John D. Nourse.....	Lancaster, Ohio.
Mrs. Thomas Wetzler.....	“ “
Mrs. Spencer J. Wright.....	“ “
Mrs. John S. Brasee.....	“ “
S. Theodoe Shaeffer.....	“ “

Guernsey County.

J. E. Annis.....	Cambridge, Ohio.
Mrs. W. S. Heade.....	“ “
Mrs. J. H. Nash.....	“ “
Miss Sarah E. Brown.....	“ “
Mrs. Mary E. Craig.....	Washington, Ohio.

Harrison County.

D. B. Welch.....	Cadiz, Ohio.
Margaret McCreedy.....	“ “
Martha Robinson.....	“ “
Wm. Croskey.....	Hopedale, Ohio.
Mrs. Judith Johnson.....	Short Creek, Ohio.

Holmes County.

Jacob Miller.....	Loudonville, Ohio.
Abraham Druschel.....	Berlin, “
Mrs. Adam Ettie.....	Millersburgh, “
Mrs. Ella Baily.....	“ “
Mrs. Hattie Werhley.....	“ “

Knox County.

NAMES.	P. O. ADDRESS.
Hon. Charles Cooper.....	Mt. Vernon, Ohio.
Mrs. Ella C. Devin.....	" "
Mrs. Wm. Waddle.....	" "

Lucas County.

Rev. E. Hannin.....	Toledo, Ohio.
Rev. Dr. Bacon.....	" "
Mrs. H. E. Howe.....	" "
Miss Anna Mott..	" "
Mrs. W. H. D. Foster.....	" "

Marion County.

George B. Christian.....	Marion, Ohio.
Amos H. Kling	" "
Mrs. W. Z. Davis.....	" "
Mrs. C. H. Morris	" "
Mrs. A. H. Hord.....	" "

Montgomery County.

Mrs. Maria S. Bickham.....	Dayton, Ohio.
Mrs. Elizabeth B. Doren.....	" "
Mrs. Mary H. Frisch.....	" "
Mr. Albert Kern.....	" "
Mr. James Applegate.....	" "

Monroe County.

Dr. T. H. Armstrong.....	Woodsfield, Ohio.
Mrs. Peter Dorr.	" "
Mrs. H. F. Hunter.....	" "
Miss Bella Sinclair.....	" "
Mr. Edward Okey.....	Stafford, "

Sandusky County.

Dr. M. Stamm.....	Fremont, Ohio.
Mrs. W. E. Haynes.....	" "
Mrs. S. P. Meng	" "
Mrs. Dr. J. B. Rice.....	" "

Scioto County.

Dr. J. F. Davis.....	Portsmouth, Ohio.
J. Scott Peebles.....	" "
Mrs. Amanda Purcell.....	" "
Mrs. E. F. Draper.....	" "
Mrs. B. F. Richardson.....	" "

Stark County.

John F. Reynolds....	Canton, Ohio.
Dr. Lew Slusser.....	" "
Mrs. H. B. Saxton.....	" "
Mrs. L. V. Thurston.....	" "
Mrs. Susanna Tressel.....	Alliance, Ohio.

NAMES.	Washington County.	POST OFFICE ADDRESS.
Charles Jones.....		Marietta, Ohio.
D. B. Torpy.....		" "
Mrs. Dr. Curtis.....		" "
Mrs. J. H. Grafton.....		" "
Mrs. Francis Ramsey		" "

WORK-HOUSES.

CLEVELAND CITY WORK-HOUSE.

Directors.

Robt. E. Mix, Cleveland.
Fred. W. Pelton, "
A. McAlister, "
A. T. Van Tapel, "
A. P. Winslow, "
W. D. Patterson, *Superintendent.*
S. M. White, *Clerk.*

This institution, combining Work-house and House of Refuge, continues under the efficient superintendency of Mr. W. D. Patterson, who, for fifteen years has so successfully managed its affairs. The labor of this prison is conducted upon the "public account" system, and has been conducted for several years under the immediate control and sole management of the Superintendent.

The domestic department continues to be a model of neatness, while the moral and religious interests of the inmates are carefully provided for.

The *Refuge*, or department for juvenile offenders, is still kept within the walls, and under the control of the work-house authorities.

That the city of Cleveland should year after year tolerate such an outrage upon misguided and wayward children, is entirely out of character with the general intelligence and benevolent sympathies of the community.

There should be an absolute divorcement of these departments, and a separate provision made for the young offenders.

ZANESVILLE WORK-HOUSE.

Having failed to secure a statistical report from this institution, I think (as it is in strict accordance with personal observations) it is proper to submit the report of the Board of County Visitors, as follows :

THE WORK-HOUSE

Was visited by the same persons, and they are happy to state that they found everything, under the efficient management of Lieutenant Fineral and his wife, in pleasing contrast to that of the jail. The building is light and cheerful, making it comparatively an easy task to keep clean, and it is clean and orderly. There were sixteen (16) inmates, most of them from the surrounding counties, and it is rather a grim commentary on modern justice to state that a youth of eighteen years is sentenced to this establishment for over three years for stealing chickens, whose value amounted to two.dollars and fifty cents (\$2.50).

The men were idle on the day we made the visit, in consequence of the rain having prevented stone from being hauled, and everything around the house was scrupulously clean—there was absolutely nothing of that kind to be done. This committee would be glad if every thinking man and woman in Muskingum county could have visited with them those two places of confinement on that day.

There is but one recommendation that this Board considers necessary at present, and that is, the oft-repeated one of making a different passage from the prisoners' dining-room to the kitchen, the reason for the change being sufficiently obvious on examination.

The subject of

OTHER EMPLOYMENT

Than breaking stone, for the criminals confined in the work-house, has been for a long time a serious consideration with this Board, as well as indoor employment for the inmates of the infirmary, and they hope, with the co-operation of the proper authorities, to be able to compass it at no very distant date. All of which we respectfully beg to submit.

E. E. FILLMORE,
MRS. THOS. GRIFFITH,
MRS. T. J. MAGINNIS.

CINCINNATI WORK-HOUSE.

Directors.

Samuel W. Frost, Cincinnati; term expires, 1890.	
Howard Douglas, " " 1889.	
Daniel Weber, " " 1891.	
Charles B. Wing, " " 1892.	
Louis Werner, " " 1888.	
George W. Ziegler, <i>Superintendent.</i>	
W. L. Thompson, <i>Clerk.</i>	

The superintendency by Col. G. W. Ziegler, who, for several years past has held this position, is highly creditable. The experience acquired in the management of such an institution by a man so long

identified with public affairs, familiar with police duties, and possessing public confidence, is of the utmost value to the institution and of equal, if not greater, importance to the tax-payers of the city of Cincinnati.

From frequent opportunities during the year of observing the management of this work-house, favorable impressions have been made.

Prisoners are comfortably clothed, substantial diet is furnished, and a firm but apparently kind enforcement of discipline is maintained.

Mr. Thompson, who has for many years been the clerk of the Board of Directors, is certainly a model officer.

The present Board of Directors consists of gentlemen of character and of large experience in business affairs. They are evidently seeking to promote the interest of the institution, and to secure the best results possible under the peculiar difficulties which this, in common with other city work-houses, are compelled to labor.

Short Sentences

Are as a rule given for such offenses as under our statutory and municipal laws consign the offender to the work-house, and this rule seems to be so uniform in its application, that little, if any, discrimination is made between old and new offenders. As a result, there is a large class of offenders well known to the courts, the police and the work-house officers as "rounders," or persons—male and female—who rotate, with as much certainty and almost as much regularity as the moon, within certain limits of offenses against the peace and order of the community, and brief periods of service in the work-house. Some individuals of this class, known as recidivists, have been sent as often as fifty times under sentence from the same court to the same work-house, while it is known that a large class, unless death intervenes, only need time to reach such a maximum.

These short sentences so often repeated are the merest travesty on the administration of Cincinnati laws.

There is no reason either in the law of the State, or the higher law of humanity justifying such proceeding.

Cumulative penalties should be imposed until a third or possibly fourth conviction is reached, and this should be followed by an indeterminate sentence, from which the culprit's only hope of release could come from satisfactory evidence upon his part to the work-house authorities of disposition and ability to live a sober, industrious and honest life.

The parole law now applied in our State to persons convicted of felonies, is equally, if not more, applicable to misdemeanants, and, if applied, would work out important results favorable to community as

promoting good order and safety to persons and property, to weak and erring men, by deterrent influences or disciplinary treatment and tests, and to work-houses, by enabling them to secure remunerative employment for the labor of prisoners.

STATISTICS OF MUNICIPAL COURTS AND PRISONS.

While considering this subject, the attention of the Board is called to the fact that all previous attempts to secure statistics of towns and villages of municipal courts have been attended with no better results than during the past year. Of over four hundred blanks sent out, only a little more than one-fourth were returned. Mayors acting as police magistrates seem to pay little attention to the records of such proceedings, and there seems to be no system whatever in registering arrests, imprisonments, offenses and penalties.

The time is at hand when such statistics are demanded in the interest of good government, and neglect to provide them should not be regarded with indifference.

POLICE COURTS.

There should be State legislation—if municipalities will not provide against it—forbidding the presence of “toughs” and “crooks” and “cranks”—all of whom are known more or less familiarly to the police—and of minors in our police courts as mere idle, loafing lookers-on. We have laws authorizing railroad conductors to exercise police powers over boys, who risk their lives by jumping on to moving trains. This provision of law is in the interest of the boys (it should extend to girls congregating about railroad stations as well), and for the protection from physical injury.

The moral and social dangers to the youth or others, who hang round the average police court, are of such character as would justify severe measures for their prevention.

There is also a tabular statement of station houses and village lock-ups that should be of public interest, but its chief value will be found in the fact clearly indicated, that but little public attention is given to the subject of dealing with minor offenses, misdemeanors and violation of ordinances.

In our larger cities and in some cities of the second class, within recent years, some interest has been awakened, resulting in improved buildings, sanitary regulations, separation of sexes, and personal supervision, by special officers, of station houses.

This is especially true of the city of Cincinnati, where a marked improvement of the entire police system is apparent. The old, neglected, dark and dirty station houses have had a general overhauling and are now being kept scrupulously clean, and are carefully supervised by the chief of police, Philip H. Deitsch, who dignifies the office by giving personal attention to the minor details of his department of the city government.

One of the advance steps taken during the past year in the police regulations of the city is the conversion of the upper story of the old Bremen Street Station House into a separate apartment for females, where, upon arrest, they are taken and placed in custody of two police matrons, one or the other being present at the station house day and night. These matrons, Mrs. Pauline Fisher and Mrs. Margaret Meade, are women of intelligence and character, who manifest interest and qualifications for their work.

This house of detention for females was opened on the 13th day of September last, since which time, up to the 28th of October, three hundred and thirty-seven (337) females and three (3) small boys have been placed under its care for longer or shorter periods.

In addition to care of women under arrest until their trial, and the searching of the persons of female suspects, the House of Detention has already developed its usefulness in sheltering unfortunate girls or young women who have been decoyed from home and have neither friends nor money for their protection against the temptations and vices of a great city.

One young woman of this class, decoyed under false promises of employment, was induced to leave her home and family clandestinely in company with a woman who promised her profitable employment. On reaching Cincinnati, the poor girl was horrified to find herself in a house of ill-fame. She sought the protection of the police, was placed under the care of Mrs. Meade, and sheltered from the observation of prying eyes until she was taken by her father back to her home in the interior of the State.

This incident is but one of many of the kind that will occur, and the value of such service can only be estimated by those who can appreciate the rescue of misguided girls from a life of shame and their restoration to homes whose happiness thus blighted would be desolate indeed.

The House of Detention for females above referred to, is a model of cleanliness and systematic care, that could and ought to be provided for in all our cities and larger towns, while there is no good reason why any village, providing a building for the detention of persons under

arrest for misdemeanor or crime, should not be required to have suitable buildings and to provide for their proper care.

The annexed summary of numbers and classes of persons consigned during the year to a comparatively small proportion of city station houses and village lock-ups, if considered in connection with the character and keeping of such places as elsewhere tabulated (see table), will indicate the public neglect or indifference to grave and important interests of community.

NATIONAL CONVENTIONS.

By direction of the Board I attended the meeting of National Conference of Charities and Corrections held at Omaha, commencing on the 25th of August.

Personal indisposition prevented active participation in the work of the Conference, beyond such committee-work as had been assigned.

Our Board was represented by General Brinkerhoff. The Associated Charities of Columbus, other municipal, and some of the county charitable organizations were represented.

The Conference was well attended, and its proceedings interesting and profitable.

In this connection it is deemed proper to call the attention of the Board to the general importance of such conferences. Those of large experience, and practical knowledge of organized charities, and who have felt the responsibility for their wise, humane, and economical administration, are brought together on these occasions, and engage in full and free discussion of questions relating to laws, organizations, systems, management, and general methods of administration, that are possibly more instructive and better calculated to advance the interests of public organized charities than any other means that could be employed. Other States, through their Boards of Trustees, regard these meetings as important, and provide ways and means by which institutions may be represented.

Our own State, unfortunately, makes little, if any, provision of the kind. This is to be regretted, as no higher advantages are attainable, and no cheaper method of education could be devised.

The next National Conference will be held at Buffalo, N. Y., in June next. It would be well if our cities, county and State institutions could all of them be represented.

NATIONAL PRISON CONGRESS,

Held at Toronto, Canada, was well attended, and its sessions throughout were exceedingly profitable.

Nothing could exceed the hospitality of the Provincial authorities of Ontario, and of the municipal authorities of Toronto.

The Board of State Charities was represented by General Brinkerhoff and the Secretary.

Our State Penitentiary, by several members of the Board of Managers and the Warden.

Representatives were also present from the Work-house and House of Refuge, Cincinnati, and the Work-house of Cleveland.

CONCLUSION.

The year closing with this report has been eventful of nothing so much as the constantly increasing demands upon the office in the way of correspondence.

Reference has already been made to the perplexing and unsatisfactory labor of compiling reports sent to the office from public institutions.

It is highly gratifying to find in the review of the year a steady progress in the general management of our public charitable and correctional institutions, and at the close of the year to know that each and all are striving fairly to promote the public interests for which these institutions were organized.

Respectfully submitted.

A. G. BYERS, *Secretary.*

DETAILED ACCOUNT OF EXPENSES.

SALARY AND TRAVELING EXPENSES OF SECRETARY.

Date.	For what purpose.	Amount.	Total.
1886.			
Nov. 17	Trip to Springfield.....	\$3 35	
30	" Delaware	75	
			\$4 10
Dec. 1	Salary to date	\$50 00	
15	" "	50 00	
17	Messenger to Mansfield—R. R. and hotel.....	4 70	
18	Dinner.....	50	
18	Messenger to New Lexington.....	5 00	
20	Trip to Cleveland	75	
31	Salary to date	50 00	
			160 95
1887.			
January 3	Trip to Lancaster.....	\$ 75	
10	" Clarke county	2 20	
15	Salary to date	50 00	
15	Trip to Akron.....	1 25	
18	Hotel—Columbus	3 75	
21	Trip to Ironton.....	2 25	
27	" New Lexington	4 50	
31	Salary to date	50 00	
			114 70
Feb. 2	Supper	\$ 50	
2	Trip to Akron.....	2 00	
5	R. R. to Columbus.....	1 50	
6	Columbus—Park hotel.....	1 00	
7	Dinner.....	50	
12	Hotel "Buchtel"—Akron....	23 70	
12	Trip to Mt. Vernon.....	75	
15	Salary to date	50 00	
18	Trip to Upper Sandusky	2 50	
22	Trip to Akron and return.....	2 00	
26	Lunch and cab	50	
			84 95
March 5	Toledo—cab and supper	\$ 75	
7	" —hotel and hack.....	3 50	
7	Trip to Detroit and return.....	3 60	
10	Detroit—hotel.....	10 75	
10	R. R. Toledo to Defiance	1 50	
10	Hotel, \$2.00; livery, \$3.00, and 'bus, 25c.....	5 25	
10	Defiance to Toledo	2 00	
11	Upper Sandusky—dinner.....	50	
22	Salary—February 15th to March 15th.....	100 00	
15	Trip to Athens.....	75	
22	" Cincinnati	5 75	
24	" Dayton	3 05	
28	" Mansfield	7 25	
30	Columbus—hotel and livery	3 25	
			147 90
April 1	Salary to date	\$50 00	
4	Trip to Delaware.....	25	
5	" Athens	75	
6	Trip from Athens to Toledo.....	2 00	
8	Toledo—hotel and hack....	7 25	
11	Lancaster to Akron.....	1 50	
12	Akron to Warren and return.....	1 25	
14	Hotel and livery.....	3 25	
14	Mt. Vernon to Columbus	1 00	

TRAVELING EXPENSES—Continued.

Date.	For what purpose.	Amount.	Total.
1887.			
April	15 Trip to Xenia and return.....	\$4 30	
	15 Salary to date	50 00	
	18 Trip to Cleveland.....	50	
	20 Hotel, 'bus and meals.....	7 60	
	21 Trip to Toledo.....	4 75	
	21 " Wauseon	4 00	
	21 " Bryan	3 25	
	22 " Toledo	2 00	
	22 " Defiance.....	2 25	
	25 " Hicksville and return	1 10	
	26 " Fostoria	2 55	
	28 " Springfield.....	1 75	
	28 " Xenia	60	
	29 Return to Columbus.....	2 10	
	30 Salary to date	50 00	
			\$204 00
May	3 Park hotel—Columbus	\$1 00	
	3 Trip to McArthur.....	50	
	4 " Pomeroy.....	4 00	
	5 " Gallipolis	2 25	
	5 Columbus—dinner and cab	1 00	
	8 Toledo—hack	1 00	
	8 Trip to Napoleon	4 05	
	9 " Defiance	2 05	
	12 " Toledo.....	5 25	
	22 " Findlay.....	4 75	
	13 " Fostoria	1 40	
	15 Salary to date	50 00	
	17 Trip to Mt. Vernon	3 00	
	18 " Akron	2 00	
	19 " Cleveland.....	3 00	
	19 Crestline—dinner	50	
	19 Galion—hack and livery.....	2 75	
	20 Iberia—hotel.....	1 00	
	21 Columbus—dinner	50	
	23 Trip to Marion	75	
	24 Trip to Bellefontaine.....	2 50	
	24 " Urbana	1 40	
	27 " Toledo	7 80	
	28 " Sandusky	2 75	
	28 Elyria—livery and hotel	2 00	
	28 Cleveland—'bus and street cars	40	
	30 Columbus—sleeper and meals.....	2 25	
	31 Trip to Zanesville.....	2 35	
			112 20
June	1 Salary to date	\$50 00	
	4 Hocking county—livery and hotel.....	2 75	
	7 Washington county—livery and hotel	4 25	
	8 Noble " " "	4 00	
	9 Monroe " " "	3 90	
	9 Guernsey " " "	1 25	
	10 Trip to Newark.....	2 25	
	10 Columbus—dinner	50	
	13 Trip to Mansfield	1 75	
	14 " Wooster.....	4 25	
	15 " Crestline	2 65	
	15 Salary to date	50 00	

TRAVELING EXPENSES—Continued.

Date.	For what purpose.	Amount.	Total.
1887.			
June 17	Dinner.....	\$ 50	
18	Trip to Defiance.....	2 75	
20	Iberia—breakfast and dinner.....	1 25	
21	Galion—hotel and hack.....	1 50	
23	Trip to Xenia and return	3 70	
24	Dinner.....	50	
			\$137 75
July 1	Salary to date	\$50 00	
1	Trip to Mansfield.....	2 25	
1	“ Ashland.....	2 50	
2	“ Cleveland	60	
3	Columbus—Park hotel.....	1 00	
6	Trip to Marysville.....	2 00	
7	Cleveland—supper and 'bus.....	75	
8	New Philadelphia—hotel and livery.....	3 50	
11	Canton to Toledo—meals and 'bus.....	1 25	
13	R. R. to Fostoria and hotel.....	2 30	
15	Salary to date.....	50 00	
15	Trip to Dayton.....	2 55	
16	“ Eaton	3 00	
18	“ Cincinnati.....	1 75	
18	“ Troy	2 75	
19	“ Sidney	2 50	
19	“ Wapakoneta.....	2 50	
20	“ Lima	4 25	
20	“ Cleveland	1 25	
22	“ Ashtabula.....	4 50	
22	“ Youngstown.....	4 90	
23	“ Ravenna	3 50	
23	Return via Cleveland R R.....	3 25	
30	Toledo to Cincinnati.....	2 25	
30	Telegraphing and laundry.....	85	
31	Salary to date.....	50 00	
			205 95
August 1	Trip to Cincinnati.....	\$1 35	
2	“ Dayton	1 50	
3	“ Toledo	2 50	
4	“ Detroit	2 25	
5	“ Cleveland	5 75	
8	Columbus—dinner	50	
9	Trip to Athens.....	50	
11	Neil House—Columbus.....	4 00	
15	Trip to Mt. Gilead.....	2 20	
15	Salary to date.....	50 00	
21	Dinner	50	
21	Chicago and return.....	12 65	
22	Trip to Defiance.....	1 25	
23	Breakfast—Garrett	75	
23	Chicago—'bus, street cars and cab.....	2 50	
23	“ Grand Pacific hotel.....	4 25	
23	“ 'bus and baggage.....	75	
23	Chicago to Omaha.....	17 75	
27	Trip to Lincoln.....	2 00	
31	Hotel at Omaha.....	24 50	
31	Omaha to Chicago.....	5 17	
31	Salary to date.....	\$50 00	
			192 62
Sept. 1	Hotel and 'bus—Marion, Iowa	\$1 25	
2	Sleeping car and hotel—Chicago.....	7 50	
25	2Ex.D.		

TRAVELING EXPENSES—Continued.

Date.	For what purpose.	Amount.	Total.
1887.			
Sept. 3	Livery—Defiance	\$1 50	
5	Parlor car from Fostoria	75	
5	Supper—Upper Sandusky	50	
8	Meals and 'bus—Toledo	1 25	
9	Trip to Detroit	4 75	
9	R. R. to Toronto and return	9 25	
15	Salary to date	50 00	
16	Toronto—hotel, hack and street cars	29 00	
	Sleeping car	1 00	
17	Detroit—hotel and 'bus	2 25	
17	R. R. to Toledo, supper and chair car	3 05	
19	Trip to Dayton	2 05	
22	Dayton—hotel and 'bus	4 25	
24	Toledo—dinner and 'bus	1 00	
26	Upper Sanduskey—dinner	50	
28	Trip to Portsmouth and return	3 75	
28	" Peebles and return	1 95	
29	West Union—livery and hotel	3 75	
29	Portsmouth—hotel and 'bus	75	
30	Columbus—Park hotel	1 00	
			\$131 05
Oct. 1	Salary to date	\$50 00	
3	Trip to Cleveland	2 50	
4	" Toledo	1 75	
10	" Cincinnati	2 20	
10	" Georgetown	4 55	
13	" Toledo	2 75	
19	Columbus—hotel and meals	3 00	
20	Trip to Cleveland	2 75	
22	" Toledo	2 00	
			71 50
Nov. 15	Salary to date—Oct. 1 to Nov. 15	\$150 00	
			150 00
	Grand total		\$1,717 67

OFFICE EXPENSES.

Date.	To whom and for what paid.	Amount.	Total.
1886.			
Nov. 24	D. McManamy—witness fees	\$2 00	
Dec. 10	Ice—Riddle Ice Co	18 75	
15	Picture—Dr. Pinel	5 10	
15	R. R. Guide—1 year	1 00	
15	Repairing chairs—Halm-Bellows Co	1 00	
15	Adams Express Co	2 10	
15	Ice for 1 month—Riddle Ice Co	1 25	
15	Janitor	10 00	
31	Box rent and postage stamps	7 50	
			\$46 70
1887.			
Jan. 15	S. S. Edwards—witness fees	\$1 00	
15	Freight and drayage—reports Nat'l Conference	1 86	
15	Western Union Telegraph Co	50	

OFFICE EXPENSES—Continued.

Date.	To whom and for what paid.	Amount.	Total.
1887.			
Jan. 15	Adams Express Co.....	\$ 25	
15	Janitor	10 00	
31	Adams Express Co.....	90	
31	Central Union Telephone Co.....	17 80	
31	Ohio State Journal—printing.....	7 50	
			\$39 81
Feb. 15	J. K. McDonald—feed and livery Oct. to date....	\$27 00	
15	Postal cards.....	50	
15	U. S. Express Co.....	15	
15	H. C. McClelland.....	2 45	
15	Adams Express Co.	50	
15	Western Union Telegraph Co.....	1 49	
15	Janitor.....	10 00	
			42 09
March 3	Western Union Telegraph Co.....	\$1 02	
15	“ “	50	
15	U. S. Express Co.....	84	
15	Horse feed and livery—Feb. 15 to March 15.....	6 50	
15	B. & O. Express Co.....	1 25	
22	Janitor	10 00	
22	Postage stamps.....	5 00	
22	Picture frame for office.....	2 00	
			27 11
April 15	Box rent and postage.....	\$10 00	
15	Western Union Telegraph Co.....	1 04	
15	Janitor	10 30	
15	Central Union Telephone Co.....	17 50	
15	S. H. Helmer—making cupboard.....	12 50	
18	Telegraphing.....	50	
30	Postage stamps.....	10 00	
30	J. K. McDonald—livery.....	8 00	
			69 84
May 5	Gazette Printing House.....	\$21 00	
16	Western Union Telegraph Co.....	2 72	
16	Janitor	10 00	
16	U. S. Express Co.....	2 79	
16	American Express Co.....	3 17	
16	Adams Express Co.....	3 30	
			42 98
June 1	Postage stamps.....	\$10 00	
1	Western Union Telegraph Co.....	25	
15	Telegraphing and postage.....	75	
15	J. K. McDonald—livery and feed.....	10 75	
15	Janitor	10 00	
15	F. B. Sanborn—reports.....	50 00	
			81 75
July 9	Telegraphing.....	\$ 25	
15	Box rent and postage.....	10 00	
15	Western Union Telegraph Co.....	1 51	
15	Central Union Telephone Co.....	17 50	
15	Janitor	10 00	
30	Postal cards and stamps.....	45	
			39 71
15	Janitor	\$10 00	
19	Western Union Telegraph Co.....	2 32	
31	Postage stamps.....	5 00	
31	Envelope sealer.....	50	
	Western Union Telegraph Co.....	2 06	
			19 88

OFFICE EXPENSES—Continued.

Date.	To whom and for what paid.	Amount.	Total.
1887.			
Sept. 15	Janitor	\$10 00	
Nov. 1	Western Union Telegraph Co	3 07	
6	Postage and postal cards.....	10 50	
6	City directory.....	3 00	
6	Box rent (P. O.)	2 00	
6	U. S. Express Co.....	80	
12	Western Union Telegraph Co	1 31	
12	W. J Hudson, copying..	7 50	
12	J. K. McDonald—June to November 15.....	28 00	
12	Adams Express Co	60	
12	B. & O. Express Co	50	
15	Janitor	22 00	
15	Central Union Telephone Co.....	17 25	
			\$96 53
	Grand total.....		\$518 40

SALARY OF CLERK.

Date.	To whom paid.	Amount.	Total.
1886.			
Dec. 1	M. Anna Byers.....	\$41 66	
15	Same	41 66	
31	Same	41 66	
1887.			
January 15	M. Anna Byers.....	\$41 66	
31	Same	41 66	
Feb'y 15	Same	41 66	
March 3	Same	41 66	
April 1	Same	83 33	
15	Same	41 66	
30	Same	41 66	
May 16	Same	41 66	
June 1	Same	66 66	
15	Same	66 67	
July 1	Same	66 66	
15	Same	66 67	
August 9	Same	66 67	
15	Same	66 66	
Sept. 8	Same	66 67	
October 1	Same	133 33	
Nov. 15	Same	200 00	
			\$1,299 92

TRAVELING EXPENSES OF MEMBERS.

Date.	To whom paid.	Amount.	Total.
1886.	L. J. Jackson—		
Nov. 24	Railroad fare.. .. .	\$3 10	
24	Hotel	3 00	
24	Hack and car fare.....	60	
			\$6 70
	R. Brinkerhoff—		
Nov. 5	Hack	\$ 25	
5	R. R. to Atlanta and return	16 00	
5	Sleeper and meals	4 45	
12	Hotel	20 50	
12	Sleeper and breakfast.....	2 75	
13	Parlor car to Cincinnati and meals.....	3 25	
13	Sleeper to Mansfield	2 00	
14	Hack	25	
			5
	Wm. Howard Neff (attending Board meetings Nov. 23-24)—		
Dec. 1	Railroad to and from Columbus	\$6 50	
1	Hotel	11 25	
1	Omnibus and parlor car.....	75	
			18 50
	R. Brinkerhoff (attending Board meeting Nov. 23-24)—		
Nov. 23	Railroad and hack to Columbus ..	\$2 60	
24	Hotel	4 00	
24	Railroad and hack home.....	2 60	
24	Supper at Crestline	50	
			9 70
Nov. 15	Hack for Committee—Cleveland, August 5.....	\$7 00	
			7 00
	Wm. Howard Neff—		
Dec. 31	Expenses attending Board meeting in Dec....	\$18 00	
			18 00
1887.	Wm. Howard Neff—		
Jan. 31	Expenses, January 17 to 19.....	\$17 10	
			17 10
	R. Brinkerhoff (Board meeting)—		
Jan. 10	Hack and R. R. to Columbus.....	\$2 65	
12	Hotel	8 75	
12	Hack and R. R. to Mansfield.....	2 65	
12	Supper at Cresline.....	50	
			14 55
	Wm. Howard Neff (Board meeting)—		
Apr. 13	R. R. to Columbus.....	\$3 50	
13	Hotel	9 35	
17	R. R. to Xenia, \$1.65 ; to Cincinnati, \$1.95.....	3 60	
			16 45
	R. Brinkerhoff—		
Apr. 7	Hack at Mansfield.....	\$ 25	
7	R. R. to Toledo.. .. .	2 55	
7	Hack	50	
8	Hotel.....	2 50	
8	R. R. to Mansfield	2 55	
8	Hack	25	
14	Hack and R. R. to Columbus.....	2 40	
16	Hotel	3 00	
16	R. R. and hack to Mansfield.....	2 40	
			16 40
	R. Brinkerhoff—		
July 30	Hack and hotel to Cincinnati.....	\$5 55	

TRAVELING EXPENSES—Continued.

Date.	For what purpose.	Amount.	Total.
1887.	R. Brinkerhoff—Continued.		
July 30	Sleeper	\$2 25	
31	Grand hotel.....	3 00	
Aug. 2	R. R. to Dayton.....	1 56	
2	R. R., Dayton to Toledo.....	4 75	
2	Supper at Xenia.....	75	
4	R. R., Toledo to Cleveland.....	3 50	
4	Meals	1 75	
5	Telegram	25	
5	R. R. to Mansfield and hack.....	2 55	
5	Hack	25	
21	R. R. to Richwood.....	1 75	
	R. R. and hack to Girls' Home.....	1 75	
23	R. R. to Chicago and hack.....	8 95	
23	Sleeper	1 75	
24	R. R., Chicago to Omaha.....	12 50	
24	Supper	75	
24	Sleeper	2 00	
25	Breakfast	75	
25	Council Bluffs.....	1 00	
27	R. R. to Lincoln and return.....	1 60	
31	Hotel—Omaha	18 00	
31	Omnibus.. ..	25	
Sept. 7	Omaha to Chicago.....	14 50	
8	Chicago to Toronto, and meals	18 50	
16	Hotel	23 75	
16	R. R. to Mansfield.....	9 00	
16	Meals	2 25	
16	Sleeper	2 25	
17	Breakfast	75	
17	Hack	25	
			\$148 46
Aug. 4	H. H. McFadden (Board meeting)— R. R. to Steubenville and return.....	\$6 55	
5	Hotel.....	2 50	
5	Sleeper to Wellsville.....	1 50	
6	Breakfast at Wellsville.....	50	
Oct. 17	R. R. from Steubenville to Columbus.....	4 50	
17	Lunch at Dennison.. ..	20	
18	Hotel.....	2 50	
18	R. R. from Columbus to Steubenville.....	\$4 50	
			22 75
Apr. 14	J. G. Doren (Board meeting)— R. R. Dayton to Columbus.....	4 50	
15	Meals and car fare	1 90	
Oct. 17	R. R. to and from Columbus	4 10	
19	Hotel.....	7 00	
			17 10
Oct. 17	Wm. Howard Neff (Board meeting)— R. R. to and from Cincinnati.....	\$6 80	
19	Hotel.....	8 75	
			15 55
Oct. 17	R. Brinkerhoff— R. R. from Mansfield and return	\$4 80	
19	Hotel	8 00	
			12 80
	Grand total.....		\$390 51

TABLE A.—SHOWING NUMBERS, CLASSES, MOVEMENT OF POPULATION AND COST OF MAINTENANCE OF THE STATE ASYLUMS FOR THE INSANE.

	Athens.			Cleveland.			Columbus.			Dayton.			Longview.			Northwestern.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
General results from opening of Asylum—																		
First admissions.....	1730	1597	3327	2736	2900	5636	1478	1434	2912	.....	.....	.....	1937	1725	3662	381	371	752
Readmissions	271	259	530	473	452	925	589	609	1198	.....	.....	.....	1015	1069	2084	27	24	51
Total admissions	2001	1856	3857	3209	3352	6561	2067	2043	4110	3150	3006	6156	2952	2794	5746	408	395	803
Discharged—																		
Recovered	738	648	1386	1241	1327	2568	858	728	1586	1443	1270	2713	1176	1211	2387	170	161	331
Improved	128	154	282	505	667	1172	111	197	308	317	355	672	439	422	861	46	79	125
Stationary or transferred.....	369	396	765	708	763	1471	353	323	676	613	622	1235	291	162	453	48	36	84
Died.....	374	272	646	408	281	689	357	278	635	488	458	946	695	587	1282	77	57	134
Total	1609	1470	3079	2862	3038	5910	1679	1526	3205	2861	2705	5566	2601	2382	4983	341	333	674
Results for the year—																		
Remaining November 15, 1886	378	393	771	314	311	625	428	476	904	293	299	592	346	388	734	54	62	116
Admitted during the year.....	126	105	231	141	133	274	140	144	284	100	84	181	120	108	228	34	14	48
Total	504	498	1002	455	444	899	568	620	1188	393	383	776	466	496	962	88	76	164
First admission.....	95	80	175	115	111	226	115	114	229	70	69	139	85	76	161	25	9	34
Readmission	31	25	56	26	22	48	25	30	55	30	15	45	35	32	67	9	5	14

TABLE A—Continued.

	Athens.			Cleveland.			Columbus.			Dayton.			Longview.			Northwestern.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
Discharged recovered—1st admissions...	33	40	73	40	45	85	77	46	123	26	18	44	23	22	45	11	4	15
“ readmissions....	10	12	22	3	11	14	13	6	19	21	9	30	14	8	22	4	1	5
Total	43	52	95	43	56	99	90	52	142	47	27	74	37	30	67	15	5	20
Discharged improved	20	20	40	33	32	65	12	21	33	20	20	40	20	19	39	7	4	11
“ unimproved	12	10	22	25	27	52	22	33	55	19	6	25	21	11	32	3	....	3
Died	37	30	67	18	13	31	30	23	53	18	29	47	38	18	56	4	5	9
Total	112	112	224	119	128	247	154	129	283	104	82	186	116	78	194	29	14	43
Remaining November 15, 1887	392	386	778	335	316	651	414	491	905	289	301	590	350	418	768	59	62	121
Daily average on register	393	387	780	325	319	644	468	511	979	.....	.....	600	350	402	752	61	62	123
“ actually in Asylum	385	380	765	330	307	637	410	453	863	.....	.....	591	350	402	752	59	62	121
Absent, visiting or on probation	4	7	11	5	9	14	19	35	54	.....	.....	.....	.....	.....	.....	.....	.....	...
Condition of patients Nov. 15, 1887—																		
Probably curable cases	31	19	50	.....	.....	.....	44	61	105	30	20	50	34	40	74	9	7	16
Possibly curable cases	65	45	110	.....	.....	.....	70	126	196	.....	.....	.....	8	9	17	15	14	29
Chronic and probably incurable—																		
a Imbeciles and idiots	4	6	10	2	1	3	5	2	7	.....	.....	.....	27	22	49	2	2	4
b Epileptics	19	10	29	15	9	24	22	10	32	6	8	14	25	23	48	5	4	9
c General paralytics	16	.....	16	22	2	24	4	4	8	9	.....	9	6	.....	6	2	1	3
d Other forms of insanity	257	306	563	296	304	600	250	253	503	.....	.....	.....	250	324	574	26	34	60

TABLE A--Continued.

	Athens.	Cleveland.	Columbus.	Dayton.	Longview.	North-western.
Current expenses for year	\$105,759 37	\$100,936 40	\$146,546 91	\$94,448 73	\$104,815 07	\$11,900 00
Paid on account of salaries	5,562 47	5,066 72	5,741 39	5,100 00	5,500 00	a 7,200 00
Total	\$111,321 84	\$106,003 12	\$152,288 30	\$99,548 73	\$110,315 07	\$19,100 00
Per capita cost per annum—						
On daily average actually in asylum.....	145 52	166 41	176 46	168 44	146 69	157 85
“ on asylum register	142 72	164 60	155 55	165 91	146 69	155 28
Average ratio of attendants to patients	1 to 13	1 to 13	1 to 14	1 to 14	1 to 19	1 to 12
Total number of employees, all in and outdoor	132	124	164	103	88	26

a Includes wages of employees.

TABLE B.—STATISTICS OF BENEVOLENT INSTITUTIONS.

	Blind.	Deaf and Dumb.	Feeble-Minded Youth.	Soldiers' and Sailors' Orphans' Home.
Inmates received since organization—Boys	828	.....	907	.....
Inmates received since organization—Girls	555	.....	600	.....
Total	1,383	2,216	1,507	.....
Remaining November 15, 1886.....	214	388	731	652
Received during the year.....	45	81	33	130
Sent to parents or guardians.....	43	28	28	111
Temporarily absent.....	.....	35	.....	.....
Placed in families.....	.....	.....	.....	.....
Transferred to other institutions.....	.....	8	.....	.....
Died	4	1	13	3
Remaining November 15, 1887.....	216	397	725	668
Whole number for the year—Boys..	156	250	478	502
“ “ —Girls..	105	219	288	280
Daily average.....	217	408	717	674
Officers and teachers	28	32	32	22
Employes	43	54	114	85
Current expenses, including salaries	\$41,247 19	\$72,191 69	\$115,796 15	\$101,452 41
Cost per inmate for the year.....	190 08	176 94	142 59	145 84

TABLE C.—PENAL INSTITUTIONS—SHOWING NUMBER OF PRISONERS, OFFICERS, EMPLOYES, COST OF MAINTENANCE, ETC.

	Cleveland Work-house.	Cincinnati Work-house.	Penitentiary.
Inmates received since organization—Males..	18,790	44,135	.....
“ “ —Females	4,147	13,778	.....
Total	22,937	57,913	19,211
Remaining November 15, 1886	344	680	1,443
Received during the year ending Nov. 15, '87	2,325	3,092	614
Discharged by expiration of sentence.....	2,338	3,242	591
Pardoned .....	.....	.....	22
Out on parole .....	.....	.....	132
Transferred to other institutions.....	13	.....	14
Died.....	4	.....	17
Remaining November 15, 1887	314	530	1,324
Whole number for the year—males.....	1,998	2,757	603
“ “ —females.....	327	1,015	11
Daily average.....	352	590	1,051
Officers and guards.....	21	.....	132
Employes	11	.....	2
Current expenses, including salaries.....	\$16,192 00	\$65,132 18	\$221,199 93
Cost per inmate for the year	46 00	.....	156 95
Value of earnings for the year .....	.....	.....	223,136 97

TABLE D.—REFORMATORY INSTITUTIONS.

	Boys' Industrial School.	Girls' Industrial Home.	Cincinnati House of Refuge	Cleveland House of Refuge.
Inmates received since organiza- tion—boys.....	4,901	.....	6,373	1,368
Inmates received since organiza- tion—girls .....	.....	1,050	1,269	143
Total.....	4,901	1,050	7,642	1,511
Remaining November 15, 1886.....	575	291	344	143
Received during the year.....	249	60	255	52
Sent to parents or guardians.....	307	15	259	61
Temporarily absent.....	.....	2	8	.....
Placed in families.. ..	10	33	34	.....
Transferred to other institutions..	4	.....	23	1
Died	4	3	7	2
Remaining November 15, 1887.....	525	302	268	131
Whole number for the year—boys	865	.....	473	50
“ “ —girls .....	.....	353	126	2
Daily average.....	536	297	300	133
Officers and teachers.....	25	31	28	6
Employes	29	10	5	2
Current expenses, includ'g salar's	\$54,854 05	\$34,677 20	\$43,548 82	\$6,118 00
Cost per inmate for the year.....	102 40	116 75	145 40	46 00
Value of earnings for the year.....	.....	.....	.....	.....
Value of farm products.....	.....	.....	.....	.....

TABLE E.—CENSUS OF INSANE, EPILEPTIC AND IDIOTIC INMATES OF COUNTY INFIRMARIES PRESENT ON THE 30TH DAY OF JUNE, 1887.

Counties.	Total number of insane, epileptic and idiotic in county infirmaries, June 30, 1887.	Date of admission.				Under mechanical restraint—sleeves, muffs, etc.	Locked in cells—all or part of the time.	Violent and requiring constant care.	Habits.			Labor.		Average time employed per day—hours.		Total number of—			
		Prior to 1870.	Prior to 1880.	Since 1880.	Unknown.				Filthy by day.	Filthy by night.	Filthy by day and night.	Unattended.	Attended.	Labor being un-attended.	Labor being attended.	Epileptics.	Idiots.	Insane.	
Adams	8	1	.....	7	.....	6	1	.....	3	.....	4	.....	7	.....	4	.....	5	.....	3
Allen	27	1	3	14	9	3	4	.....	2	.....	.....	.....	.....	.....	.....	.....	4	6	14
Ashland	34	2	2	6	24	3	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	5	.....	11
Ashtabula	55	10	14	31	.....	32	22	.....	8	.....	.....	.....	19	.....	.....	.....	6	5	29
Athens.....	17	4	2	10	1	14	6	.....	.....	.....	.....	.....	2	.....	.....	.....	6	1	10
Auglaize	12	.....	4	8	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5	4	3
Belmont	32	2	9	21	.....	5	1	.....	3	.....	.....	.....	.....	.....	.....	.....	6	12	14
Brown	31	.....	3	28	.....	21	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	31
Butler	32	9	5	17	1	14	2	.....	5	.....	.....	.....	.....	.....	.....	.....	2	5	25
Carroll.....	6	4	.....	2	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6
Champaign	20	.....	2	18	.....	1	1	.....	3	.....	.....	.....	.....	.....	.....	.....	1	2	17
Clarke	55	3	2	50	.....	28	38	.....	11	.....	.....	.....	.....	.....	.....	.....	10	5	40
Clermont	27	4	1	20	2	11	2	.....	2	.....	.....	.....	.....	.....	.....	.....	4	1	22
Clinton	19	3	3	11	2	7	4	.....	4	.....	.....	.....	.....	.....	.....	.....	9	2	8
Columbiana.....	90	18	18	53	1	15	18	.....	19	.....	.....	.....	.....	.....	.....	.....	7	14	69
Coshocton	23	3	2	12	6	1	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	11	8
Crawford	17	3	9	5	.....	11	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	.....	13
Cuyahoga	276	14	45	214	3	4	43	.....	85	.....	.....	.....	.....	.....	.....	.....	16	21	239
Darke	10	2	5	3	.....	3	7	.....	2	.....	.....	.....	.....	.....	.....	.....	7	1	2

[illegible]

TABLE E—Continued.

Counties.	Total number of insane, epileptic and idiotic in county infirmaries, June 30, 1887.	Date of admission.				Under mechanical restraint—sleeves, muffs, etc.	Locked in cells—all or part of the time.	Violent and requiring constant care.	Habits.			Labor.		Average time employed per day—hours.		Total number of—		
		Prior to 1870.	Prior to 1880.	Since 1880.	Unknown.				Filthy by day.	Filthy by night.	Filthy by day and night.	Unattended.	Attended.	Labor being unattended.	Labor being attended.	Epileptics.	Idiots.	Insane.
Morgan	17	3	3	11	.....	1	3	2	.....	.....	2	7	.....	5	.....	4	3	10
Morrow	7	.....	1	6	.....	.....	3	1	.....	.....	1	.....	3	.....	2	.....	.....	4
Muskingum	52	6	5	41	.....	1	23	3	.....	.....	3	22	.....	6	.....	10	15	27
Noble	11	3	4	.....	.....	.....	.....	1	.....	.....	1	7	.....	4	.....	.....	6	5
Ottawa	8	.....	.....	2	6	.....	.....	2	.....	1	1	.....	.....	.....	.....	5	1	2
Paulding	6	1	.....	5	.....	.....	1	2	.....	.....	2	1	.....	.....	.....	1	3	2
Perry	12	2	3	7	.....	1	.....	2	.....	.....	2	5	.....	8	.....	1	8	3
Pickaway	34	.....	12	22	.....	1	18	12	.....	.....	10	.....	15	.....	5	9	11	14
Pike	5	.....	.....	5	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	2	2	1
Portage	41	21	8	12	.....	1	4	2	.....	.....	.....	23	.....	5	.....	3	8	30
Preble	16	4	2	10	.....	1	7	6	.....	1	5	1	.....	6	.....	7	4	5
Putnam	9	1	.....	7	1	.....	7	1	.....	1	2	1	.....	2	.....	2	3	4
Richland	41	7	8	25	.....	1	8	10	.....	.....	10	14	.....	.....	.....	10	4	27
Ross	27	3	5	14	5	.....	1	1	.....	.....	1	.....	.....	.....	.....	3	3	21
Sandusky	24	.....	.....	10	14	3	10	5	.....	.....	5	5	.....	.....	.....	2	1	21
Scioto	12	.....	1	9	2	1	1	1	.....	.....	1	.....	.....	.....	.....	3	3	12
Seneca	27	1	6	20	.....	12	20	11	.....	1	11	2	.....	3	.....	5	2	20
Shelby	20	2	7	11	.....	.....	4	2	.....	3	7	3	.....	6	.....	8	6	6
Stark	71	14	13	44	.....	2	17	39	.....	2	18	3	26	7	5	6	10	55

Summit	47	8	7	32	.....	3	26	10	1	.....	12	8	2	2	23	424	244	311 or 6 hrs.	186 or 5 hrs.	387	446	1600	38
Trumbull	33	.....	.....	2	31	1	24	18	.....	.....	15	2	2	2	.....	2	2	.....	.....	.....	.....	.....	33
Tuscarawas	29	3	4	22	.....	.....	9	.....	.....	.....	2	4	4	4	.....	4	4	.....	.....	.....	.....	.....	16
Union	15	1	4	10	.....	1	8	6	.....	.....	4	6	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	8
Van Wert	8	2	1	5	.....	2	4	4	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5
Vinton	9	.....	1	8	.....	.....	4	.....	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Warren	35	.....	.....	.....	.....	.....	2	2	.....	.....	9	11	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	25
Washington	29	6	4	19	.....	.....	4	4	.....	.....	7	2	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	17
Wayne	27	3	7	17	.....	.....	21	11	.....	.....	5	5	4	5	.....	5	5	.....	.....	.....	.....	.....	14
Williams	14	.....	9	5	.....	1	3	3	.....	.....	3	3	1	2	.....	1	2	.....	.....	.....	.....	.....	7
Wood	12	1	2	9	.....	1	8	7	.....	.....	3	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7
Wyandot	13	.....	4	9	.....	2	5	7	.....	.....	4	4	.....	.....	.....	.....	8	.....	.....	.....	.....	.....	8
Cincinnati City Infirmery	78	6	9	25	38	.....	1	21	2	.....	23	36	36	.....	.....	.....	.....	3	.....	30	10	.....	38
Totals	2433	246	406	1547	234	166	685	567	19	216	373	424	244	311 or 6 hrs.	186 or 5 hrs.	387	446	1600	.....	.....	.....	.....	.....

TABLE G.—STATISTICS OF CHILDREN'S HOMES.

Name of Home.	Admitted since organization.			Full orphans.	Fathers living.	Mothers living.	Both parents living.	Parents separated.
	Boys.	Girls.	Total.					
Adams.....	35	57	92	13	17	23	44	19
Athens	142	109	251	6	58	47	77	63
Belmont ..	231	144	375	31	72	108	57	57
Brown	53	40	93	18	28	40	7	7
Clarke	301	180	481	124	61	181	79	53
Clinton	73	41	114	18	27	28	23	18
Defiance	33	27	60	6	7	22	9	16
Fairfield	66	35	101	19	12	40	8	22
Fairmount District.....	552	374	926	116	171	260	379	227
Fayette	41	21	62	6	10	16	22	21
Franklin	448	312	760	122	148	98	268	124
Gallia	90	74	164	15	36	63	50	20
Guernsey	62	40	102	7	47	74	34	34
Lawrence	214	190	404	32	76	128	168	96
Licking	119	75	194	9	61	32	80	12
Logan	19	8	27	.....	12	8	5	5
Meigs	91	83	174	21	82	48	55	31
Miami	171	159	330	28	100	148	54	54
Montgomery	802	560	1362	.....	.....	.....	.....	.....
Morgan	75	74	149	8	23	33	68	17
Noble.....	70	42	112	5	27	46	32	14
Perry	49	48	97	10	38	25	24	10
Pickaway	70	45	115	12	26	21	50	17
Preble	59	43	102	6	27	26	29	14
Richland..	125	93	218	17	62	60	73	35
Scioto .....	.....	.....	.....	.....	.....	.....	.....	.....
Summit	20	24	44	2	34	42	34	16
Tuscarawas	222	149	371	16	98	171	86	.....
Union	37	38	75	15	19	19	19	3
Vinton.....	53	36	89	11	16	37	22	11
Warren	171	137	308	31	.....	.....	.....	.....
Washington	547	507	1054	92	324	381	250	.....
Wayne.....	119	78	197	11	66	68	52	24
Total	5,160	3,843	9,003	827	1,785	2,293	2,158	1,040

TABLE G.—STATISTICS OF CHILDREN'S HOMES.

Present Sept. 1, 1886.	Received during year.	Sent to parents or guardians.	Placed in families.	Transferred to other institutions.	Ran away.	Out on trial.	Died.	Present Aug. 31, 1887.	Whole number for the year.			Daily average.	Number of officers and teachers.	Number of employees.
									Boys.	Girls.	Total.			
62	15	12	13	.....	.....	.....	.....	52	35	42	77	61	2	10
91	33	12	5	.....	.....	20	1	104	70	62	132	.....	4	7
78	47	4	21	1	.....	8	2	96	82	43	125	90	4	14
40	28	8	5	.....	1	.....	2	54	30	24	54	54	2	5
63	44	20	18	5	.....	14	7	54	79	33	112	63	3	12
52	33	14	39	1	1	.....	.....	30	55	30	85	47	3	5
23	14	23	8	.....	.....	4	1	15	22	15	37	25	3	3
52	21	7	6	.....	.....	.....	.....	60	41	19	60	63	3	6
130	58	23	40	3	2	4	5	142	118	73	191	143	6	14
.....	62	4	9	.....	.....	.....	.....	49	41	21	62	49	5	7
178	147	28	87	32	2	.....	2	143	79	68	147	147	7	30
62	52	15	33	2	.....	.....	.....	65	67	48	115	79	3	7
26	41	9	.....	.....	4	16	.....	48	36	20	56	38	7	6
55	56	24	16	3	.....	.....	1	67	62	49	111	62	2	6
77	26	9	12	.....	3	.....	2	77	71	27	98	75	3	10
8	17	1	5	.....	2	4	.....	15	15	8	23	17	2	2
87	27	.....	15	1	1	10	6	86	.....	.....	.....	92	2	8
79	22	19	29	4	.....	.....	6	79	.....	.....	101	87	5	18
98	90	57	19	.....	7	.....	.....	103	76	27	103	106	4	13
61	23	16	12	.....	.....	.....	.....	59	42	33	75	63	4	8
40	21	10	7	.....	.....	4	1	39	37	23	60	.....	6	4
27	25	12	7	.....	1	7	1	25	32	21	53	23	3	4
29	28	4	13	9	.....	.....	.....	31	23	8	31	30	2	2
43	15	4	6	.....	2	1	.....	43	31	12	43	43	3	4
83	37	20	10	.....	3	6	3	76	67	53	120	77	3	9
85	16	5	11	4	.....	.....	1	80	55	46	101	.....	4	11
23	14	4	8	1	1	5	1	17	17	20	37	25	3	3
117	61	32	26	.....	.....	.....	2	128	110	68	178	127	4	11
21	5	1	11	2	1	11	1	17	.....	.....	26	20	2	3
39	19	7	11	.....	1	.....	2	37	36	22	58	37	2	3
29	27	6	.....	.....	.....	21	1	.....	.....	.....	70	.....	.....	.....
118	61	13	30	1	3	30	1	131	111	68	179	125	3	15
82	37	4	19	.....	.....	.....	1	95	58	37	95	93	4	10
2,063	1,322	427	551	69	35	165	50	2,117	1,598	1,020	2,815	1,961	113	266

TABLE H.—CLASSIFIED STATEMENT OF RECEIPTS—CHILDREN'S HOMES.

Counties.	For current expenses.						Total.
	From county.	From other counties.	From sale of stock.	From sale of farm products.	From boarding inmates.	From all other sources.	
Adams	\$5,450 00	.....	.....	.....	.....	\$108 00	\$5,558 00
Athens	9,925 36	\$165 38	\$15 00	.....	\$55 50	.....	10,161 24
Belmont	8,490 00	1,311 35	17 00	\$26 00	.....	122 62	9,966 97
Brown	5,170 22	.....	21 50	16 50	.....	.....	5,208 22
Clarke	7,993 00	16 00	226 20	100 00	.....	22 00	8,357 20
Clinton	4,262 68	.....	27 00	5 53	.....	30 50	5,305 71
Defiance	2,608 22	.....	.....	.....	.....	.....	2,608 22
Fairfield	5,614 15	.....	90 50	177 29	.....	.....	5,881 85
Fairmount district.....	8,840 11	1,758 53	.....	13 35	149 00	180 00	10,940 99
Fayette .....	.....	.....	.....	.....	.....	.....	.....
Franklin	18,285 25	583 24	126 50	.....	.....	3,064 32	22,059 31
Gallia	4,350 69	.....	.....	.....	15 00	167 21	4,532 90
Guernsey	3,196 48	.....	33 00	30 96	.....	1,071 25	4,331 69
Lawrence	4,360 20	.....	30 00	.....	3 00	.....	4,393 20
Licking	6,636 35	75 00	47 00	264 38	.....	16 15	7,038 88
Logan	1,616 40	.....	.....	117 26	86 95	2 39	1,823 00
Meigs	5,603 21	798 00	.....	.....	.....	918 00	7,319 21
Miami	8,030 54	.....	73 93	.....	.....	.....	8,104 47
Montgomery	10,981 03	.....	.....	.....	.....	.....	10,981 03

[illegible]

TABLE H—Concluded.

Counties.	Special appropriations.					Total.	Total cash received.	Value of farm products used.	Grand total.
	For new buildings.	For other improve-ments.	For furniture.	For ordinary repairs.					
Adams .....	.....	\$637 93	.....	\$187 20	\$825 13	\$6,383 13	.....	.....	\$6,383 13
Athens	\$932 93	957 20	\$75 00	250 00	2,245 13	12,406 37	\$2,118 09		14,524 46
Belmont .....	.....	185 00	300 00	200 00	685 00	10,651 97	1,750 00		12,401 97
Brown	10,199 82	.....	.....	.....	10,199 82	15,408 04	.....		15,408 04
Clarke	114 75	75 00	98 53	87 50	375 80	8,733 00	900 00		9,633 00
Clinton .....	.....	296 53	21 40	130 00	447 93	5,753 64	300 00		6,053 64
Defiance .....	.....	175 57	28 50	.....	204 07	2,812 29	194 32		3,006 71
Fairfield .....	.....	531 49	418 03	75 15	1,024 67	6,906 52	200 00		7,106 52
Fairmount district.....	3,759 90	212 11	42 55	179 52	4,194 08	15,135 07	1,372 00		16,507 07
Fayette .....	.....	.....	.....	.....	.....	.....	.....		.....
Franklin .....	.....	.....	.....	3,010 50	3,010 50	25,069 81	1,500 00		26,569 81
Gallia .....	.....	471 67	.....	.....	471 67	5,004 57	.....		5,004 57
Guernsey	18,000 00	200 00	906 07	.....	19,106 07	23,437 76	.....		23,437 76
Lawrence	1,890 09	699 43	.....	.....	2,589 52	6,982 72	.....		6,982 72
Licking .....	.....	1,286 25	8 50	257 37	1,552 12	8,591 00	.....		8,571 00
Logan .....	.....	.....	41 00	13 05	54 05	1,877 05	620 00		2,497 05
Meigs .....	.....	.....	50 00	.....	50 00	7,369 21	400 00		7,769 21
Miami .....	.....	.....	.....	323 49	323 49	8,427 96	2,798 83		11,226 79
Montgomery .....	.....	.....	2,742 37	.....	2,742 37	13,723 40	10,000 00		23,723 40

Morgan .....							.....	.....	5,931 31	550 00	6,481 31
Noble								35 00	2,299 76	300 00	2,599 76
Perry							221 11	221 11	2,781 45	350 00	3,131 45
Pickaway .....									.....	50 00	50 00
Pike .....									.....	.....	.....
Preble									3,647 06	.....	3,647 06
Richland									7,938 71	.....	7,938 71
Scioto									6,996 96	.....	6,996 96
Summit						600 00	16 50	775 36	3,593 91	.....	3,593 91
Tuscarawas							529 65	529 65	10,326 34	.....	10,326 34
Union									1,140 23	.....	1,140 23
Vinton									2,477 40	325 00	2,802 40
Warren									439 60	.....	439 60
Washington							161 47	284 94	9,552 45	.....	9,552 45
Wayne							2,100 00	2,482 95	8,853 93	1,498 30	10,352 23
Totals	\$35,497 49						\$8,786 91	\$5,147 43	\$250,652 62	\$25,226 54	\$275,879 16

TABLE I.—CHILDREN'S HOMES.—CLASSIFIED STATEMENT OF CURRENT EXPENSES.

Counties.	Provisions, including flour, meats, butter, etc.	Groceries, including coffee, sugar, spices, etc.	Drugs and medicines.	Clothing.	Bedding.	Dry goods.
Adams	\$1,437 14	.....	.....	\$297 61	.....	.....
Athens.....	802 50	\$1,072 61	\$102 55	53 60	\$99 77	\$640 97
Belmont.....	1,327 37	568 91	149 86	69 69	29 02	567 25
Brown	609 73	755 99	49 40	155 25	121 10	134 81
Clarke	901 94	827 71	56 15	63 63	44 63	388 82
Clinton	413 76	819 76	99 57	228 14	20 00	405 04
Defiance	378 45	153 30	56 11	25 20	18 12	177 20
Fairfield	1,194 60	342 67	77 50	480 30	46 91	38 48
Fairmont District..	1,700 97	454 24	89 71	139 62	.....	886 93
Fayette	380 77	875 00	24 90	150 00	100 00	545 93
Franklin	2,508 08	754 55	386 35	2 75	7 20	1,503 85
Gallia	926 40	364 84	22 00	10 90	52 77	355 50
Guernsey	326 11	220 08	6 58	8 72	.....	186 39
Lawrence	1,082 86	623 62	13 40	165 28	29 51	201 05
Licking	1,496 28	603 74	70 75	306 19	42 98	158 10
Logan	172 43	136 90	15 65	68 86	22 75	174 60
Meigs	1,000 00	300 00	.....	.....	.....	.....
Miami	828 71	1,341 01	60 65	.....	.....	753 04
Montgomery	1,435 48	976 75	175 61	.....	.....	846 50
Morgan	1,098 95	307 46	39 60	453 74	67 13	44 92
Noble	335 99	152 98	15 15	83 83	65 00	185 89
Perry	449 11	126 95	15 75	143 59	17 27	81 88
Pickaway	313 38	240 00	4 00	150 00	20 00	125 00
Pike .....	.....	.....	.....	.....	.....	.....
Preble	324 77	175 50	50 00	13 00	.....	95 62
Richland.....	1,137 65	921 73	94 52	343 90	.....	596 79
Scioto	1,223 37	283 12	18 03	.....	.....	373 41
Summit	817 14	180 00	28 46	93 68	51 00	.....
Tuscarawas.....	2,218 17	1,031 09	75 00	300 45	225 00	512 62
Union.....	499 81	.....	31 33	128 04	.....	138 95
Vinton	459 58	74 90	21 30	238 41	.....	.....
Warren .....	.....	.....	.....	.....	.....	.....
Washington	1,727 43	560 31	169 88	25 38	.....	555 79
Wayne.....	855 93	348 50	35 25	310 60	83 80	318 75
Totals	\$30,384 86	\$15,594 22	\$2,055 01	\$4,510 36	\$1,163 96	\$10,994 06

TABLE I—Continued.

Boots, shoes, etc.	Laundry supplies.	Fuel and light.	Water, plumbing, etc.	Postage and telegraphing.	Books and stationary.	Insurance.	Furniture.
.....	.....	\$422 66	.....	.....	\$131 65	.....	.....
\$325 07	\$321 00	361 93	\$130 80	\$14 20	118 79	\$138 00	\$127 32
252 55	123 49	572 01	33 10	30 65	81 49	.....	218 93
83 00	.....	333 02	86 59	.....	.....	.....	43 80
234 71	92 75	607 57	58 28	82 50	27 10	18 00	98 55
135 00	219 23	22 00	.....	11 00	47 62	.....	21 40
95 75	47 09	120 05	.....	1 80	24 25	.....	28 50
110 95	82 15	374 03	.....	7 50	55 20	.....	.....
355 50	126 61	735 95	.....	21 64	187 38	.....	42 55
148 35	72 93	198 35	.....	.....	73 22	.....	833 43
536 55	421 98	2,171 90	427 62	191 40	244 90	.....	244 05
101 61	25 65	156 60	.....	.....	12 70	.....	102 18
88 70	30 67	166 29	.....	4 80	10 00	.....	8 00
233 60	76 92	178 86	21 60	3 80	18 35	.....	44 25
304 72	98 84	222 73	143 88	11 55	97 55	30 50	5 00
42 30	6 15	82 03	.....	54	26 72	.....	41 00
150 00	75 00	300 00	.....	.....	.....	18 00	.....
561 55	12 00	724 94	.....	.....	33 50	.....	204 35
741 93	.....	154 80	106 63	.....	183 32	.....	.....
212 60	86 98	206 23	.....	3 46	60 09	.....	48 65
120 31	27 90	55 40	.....	9 00	36 44	.....	25 85
64 05	28 57	109 57	.....	1 85	27 07	.....	44 37
95 00	45 00	100 00	10 00	2 00	25 00	.....	20 00
.....
56 40	.....	139 98	139 95	.....	5 00	.....	32 90
358 20	94 29	205 94	107 44	58 45	78 99	.....	83 93
183 04	37 51	223 97	57 00	17 00	22 55	.....	76 24
34 45	19 60	135 40	32 00	4 20	24 86	324 00	98 63
355 00	150 00	704 00	.....	25 00	90 00	.....	150 00
.....	14 03	144 63	.....	.....	11 55	.....	66 41
79 98	20 62	196 43	.....	74	24 92	45 00	181 69
.....
166 77	59 34	27 43	96 95	.....	22 28	.....	4 00
301 18	57 33	404 47	38 00	15 50	100 85	.....	123 15
\$6,528 82	\$2,473 63	\$10,559 17	\$1,489 84	\$518 58	\$1,903 34	\$573 50	\$3,019 13

TABLE I—Continued.

Counties.	Lumber.	Coffins and digging graves.	Transportation.	Miscellaneous.	Expenses of farm—implements, feed, etc.
Adams			\$2 50	\$687 99	.....
Athens	\$200 00	\$10 25	.....	196 66	\$519 39
Belmont	84 89	9 50	65 18	133 46	620 71
Brown	13 08	9 00	.....	.....	720 01
Clarke	85 75	80 00	10 55	309 61	1,109 99
Clinton	296 50	.....	.....	291 66	899 43
Defiance	35 50	12 00	115 36	222 04	.....
Fairfield .....	.....	.....	.....	291 29	371 71
Fairmount District	212 11	20 00	4 50	455 80	700 00
Fayette	59 82	.....	.....	321 05	1,023 96
Franklin	102 16	20 52	29 90	1,547 49	802 88
Gallia	40 16	.....	.....	245 47	417 69
Guernsey .....	.....	.....	1 00	127 77	63 01
Lawrence .....	.....	10 00	30 10	108 31	266 07
Licking	131 24	23 00	70	576 97	1,106 49
Logan .....	.....	.....	.....	128 15	182 02
Meigs .....	.....	.....	.....	2,016 61	150 00
Miami	48 90	29 45	.....	.....	511 02
Montgomery	162 82	.....	31 70	3,528 45	5 95
Morgan	19 21	.....	23 80	555 12	503 12
Noble	65 85	.....	.....	99 67	338 25
Perry	60 15	12 05	17 05	243 42	261 54
Pickaway .....	.....	.....	.....	.....	10 00
Pike .....	.....	.....	.....	.....	.....
Preble	56 32	.....	.....	460 00	779 14
Richland	86 58	33 00	102 46	338 81	710 96
Scioto .....	.....	8 00	29 95	193 72	704 91
Summit	60 23	.....	27 50	40 80	.....
Tuscarawas	31 37	15 00	.....	840 61	47 00
Union	94 04	12 00	11 40	.....	87 58
Vinton	3 10	1 50	.....	95 04	220 07
Warren .....	.....	.....	.....	.....	.....
Washington	44 02	.....	.....	394 69	416 06
Wayne	39 00	12 00	4 75	.....	525 00
Totals	\$2,032 80	\$317 27	\$508 40	\$14,450 86	\$14,073 96

TABLE I—Continued.

Salaries.				Wages paid employes—not farm labor.	Expenses of Trustees.	Total current expenses.
Superintendent.	Physician.	Matron.	Teacher.			
\$500 00	\$100 00	.....	\$250 00	\$1,727 55	.....	\$5,557 10
800 00	87 50	\$200 00	256 00	1,337 30	.....	7,916 21
800 00	89 75	.....	289 00	2,576 22	\$11 85	8,704 88
240 00	80 00	160 00	120 00	384 00	5 00	4,103 78
740 00	136 23	.....	197 00	1,711 60	.....	7,883 09
600 00	3 00	.....	65 00	744 00	.....	5,332 11
180 00	.....	300 00	300 00	346 00	.....	2,636 72
600 00	59 00	200 00	160 00	1,121 86	.....	5,614 15
800 00	50 00	400 00	418 07	2,862 61	180 00	10,940 99
431 93	42 10	.....	.....	748 84	.....	6,030 58
800 00	200 00	600 00	720 00	4,061 12	.....	18,285 25
250 00	57 25	250 00	216 00	742 97	.....	4,350 69
300 00	75 00	100 00	105 00	934 61	19 50	2,782 23
124 52	51 15	480 00	.....	620 95	.....	4,393 20
337 50	82 00	360 00	192 00	1,430 35	15 00	7,848 06
258 00	17 50	140 00	.....	297 50	14 00	1,827 10
276 00	.....	.....	180 00	1,089 60	.....	5,603 21
540 00	200 00	240 00	366 00	2,543 09	.....	8,998 21
500 00	300 00	300 00	240 00	2,079 44	.....	11,769 38
500 00	100 00	.....	342 29	1,080 13	.....	5,834 64
400 00	6 25	.....	35 00	241 00	.....	2,299 76
92 50	27 50	206 68	156 68	329 43	11 30	2,528 33
.....	98 00	300 00	160 00	312 00	.....	2,029 68
.....
360 00	.....	180 00	200 00	458 65	29 80	3,557 03
610 00	86 00	.....	305 00	1,057 63	41 15	7,453 49
.....	100 00	450 00	360 00	2,043 00	.....	6,728 82
600 00	97 00	.....	138 00	494 46	.....	3,577 41
800 00	.....	300 00	225 00	2,060 06	24 00	10,179 37
432 00	38 60	.....	.....	315 65	.....	2,071 02
300 00	110 00	100 00	.....	183 50	.....	2,311 78
.....
720 00	69 50	300 00	198 00	1,429 39	.....	6,987 22
700 00	60 00	.....	242 00	1,613 22	.....	6,189 28
\$14,592 45	\$2,423 35	\$5,566 68	\$6,436 04	\$38,977 73	\$351 60	\$192,324 77

TABLE I—Continued.

Counties.	Paid for buildings, improvements, etc.	Total expenditures.	Balance on hand September 1, 1887.	Per capita cost on current expenses.	Per capita cost on total expenditures.
Adams	\$637 93	\$6,195 03	.....	\$90 83	\$110 67
Athens.....	2,245 13	10,161 34	.....	80 02	105 87
Belmont	454 79	9,159 67	\$110 25	95 93	101 77
Brown	10,199 82	14,303 60	1,104 44	75 99	264 88
Clarke..	485 71	8,368 80	364 20	126 00	132 00
Clinton	426 53	5,758 64	34 83	113 45	122 52
Defiance	175 57	2,812 29	.....	102 28	110 29
Fairfield	1,024 67	6,638 82	.....	84 86	101 13
Fairmount District.....	4,194 08	15,135 07	.....	76 51	105 76
Fayette	532 55	6,563 13	.....	123 07	133 94
Franklin	3,010 50	21,295 75	.....	124 38	144 87
Gallia..	471 67	4,822 36	182 21	55 07	61 04
Guernsey .....	.....	2,782 23	635 21	73 22	101 40
Lawrence	2,589 52	6,982 72	.....	70 85	112 62
Licking	340 19	8,188 25	75 00	88 48	109 17
Logan.....	13 05	1,840 15	36 90	70 77	72 20
Meigs .....	.....	5,603 21	.....	39 41	61 17
Miami	485 24	9,483 45	.....	93 61	98 94
Montgomery	1,954 02	13,723 40	.....	71 51	129 46
Morgan	63 89	5,898 53	32 78	92 61	93 63
Noble .....	.....	2,299 76	.....	.....	.....
Perry	221 11	2,749 44	32 01	111 31	119 53
Pickaway	40 00	2,069 68	.....	67 66	68 99
Pike .....	.....	.....	.....	.....	.....
Preble .....	.....	3,557 03	90 03	78 16	82 73
Richland.....	485 22	7,938 71	.....	96 79	103 10
Scioto	1,089 99	7,818 81	2,957 09	73 14	84 83
Summit	16 50	3,593 91	.....	112 74	143 75
Tuscarawas.....	146 97	10,326 34	.....	31 09	77 16
Union .....	.....	2,071 02	.....	103 55	103 55
Vinton.....	.....	2,311 78	165 62	62 48	62 48
Warren .....	.....	.....	.....	.....	.....
Washington	236 92	7,224 14	.....	55 89	57 79
Wayne.....	2,482 95	8,672 23	181 70	66 55	93 25
Totals.....	\$34,024 52	\$226,349 29	\$6,002 27	\$74 46	\$105 56

TABLE J.—SHOWING NUMBER, CLASSES, AGES, NATIVITY AND CAUSES OF PAUPERISM OF COUNTY INFIRMARY INMATES FOR THE YEAR END-
ING SEPTEMBER 1, 1887.

Counties.	Received during year.				Discharged during year.							Number remaining September 1, 1886.	Ages.				Number between 5 and 16 years of sound mind and body.	
	From townships.	From State institutions.	Born.	Total.	Discharged.	"Placed" by indenture or adoption.	Ran away.	Died.	Sent to other counties.	Sent to State institutions.	Total.		Number remaining September 1, 1887.	Under 5 years.	Between 5 and 16 years.	Between 16 and 60 years.		Over 60 years.
Adams	34	.....	11	80	36	.....	.....	2	.....	.....	38	42	16	4	34	14	2
Allen.....	61	.....	2	131	36	.....	2	11	.....	1	50	75	7	16	7	5	.....
Ashland	9	2	.....	55	3	.....	1	2	.....	.....	6	49	.....	2	23	30	3
Ashtabula	56	.....	1	167	29	1	.....	12	2	1	45	122	8	10	86	63	8
Athens	21	.....	5	102	21	.....	.....	8	2	5	36	66	11	.....	48	18	.....
Auglaize.....	15	1	.....	49	12	.....	.....	2	.....	1	15	34	2	4	34	9	1
Belmont	60	1	11	229	45	.....	1	12	.....	15	73	156	10	1	138	80	156
Brown	32	3	2	134	23	.....	6	17	.....	.....	46	85	2	3	63	22	.....
Butler	99	3	.....	214	65	.....	4	16	15	1	101	113	.....	.....	178	36	.....
Carroll, .....	.....	12	.....	51	10	.....	.....	3	.....	.....	13	38	1	.....	24	18	1
Champaign	51	2	2	125	39	1	.....	7	5	5	57	68	.....	.....	.....	.....	.....
Clarke.....	94	3	5	225	60	.....	.....	26	11	1	94	127	14	1	114	96	.....
Clermont	64	.....	3	146	43	.....	.....	13	.....	.....	56	90	14	21	66	44	6
Clinton	59	.....	1	127	39	.....	4	10	8	.....	61	65	3	1	38	23	.....
Columbiana	82	4	3	223	55	.....	4	10	3	5	77	146	.....	.....	62	83	1
Coshocton	35	2	2	105	25	1	1	6	.....	.....	33	72	4	.....	49	19	.....

TABLE J—Continued.

Counties.	Received during year.				Discharged during year.							Number remaining September 1, 1886.	Number remaining September 1, 1887.	Ages.				Number between 5 and 16 years of sound mind and body.													
	Total.				Discharged.	"Placed " by indenture or adoption.	Ran away.	Died.	Sent to other counties.	Sent to State institutions.	Total.			Under 5 years.					Between 5 and 16 years.				Between 16 and 60 years.				Over 60 years.				
	From townships.	From State institutions.	Born.	Total.																											
Crawford	24	3	2	98	17	5	.....	9	.....	.....	31	67	4	11	61	21	11	4	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cleveland City	17	344	21	812	253	13	2	82	.....	.....	351	461	21	2	370	419	2	21	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Darke	285	1	1	415	251	5	2	7	10	11	286	120	56	147	124	87	28	56	147	124	87	28	.....	.....	.....	.....	.....	.....	.....	.....
Defiance	18	.....	.....	50	5	.....	11	5	.....	1	22	28	3	.....	25	22	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Delaware	38	4	2	122	26	.....	.....	10	4	.....	40	82	4	12	.....	.....	4	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Erie	86	5	2	190	77	5	5	11	3	3	104	110	.....	1	64	46	.....	.....	1	64	46	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fairfield	32	.....	5	169	28	.....	.....	16	.....	1	45	127	9	7	107	46	.....	9	7	107	46	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fayette	75	.....	5	178	60	.....	6	10	.....	60	136	42	34	32	86	21	29	34	32	86	21	29	.....	.....	.....	.....	.....	.....	.....	.....
Franklin	212	13	12	518	189	.....	7	51	2	.....	249	269	14	1	364	139	.....	14	1	364	139	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fulton	17	.....	.....	65	9	.....	.....	5	.....	2	16	49	5	6	22	32	.....	5	6	22	32	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gallia	75	.....	4	133	42	.....	13	14	.....	.....	69	64	6	3	39	21	.....	6	3	39	21	.....	.....	.....	.....	.....	.....	.....	.....	.....
Geauga	9	.....	.....	48	6	.....	.....	4	.....	.....	10	38	.....	1	14	23	.....	.....	1	14	23	.....	.....	.....	.....	.....	.....	.....	.....	.....
Greene	96	4	3	231	64	5	13	17	14	4	117	114	23	69	84	55	43	23	69	84	55	43	.....	.....	.....	.....	.....	.....	.....	.....
Guernsey	17	.....	.....	66	8	.....	.....	7	5	1	21	45	5	.....	47	19	.....	5	.....	47	19	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hamilton	289	.....	4	529	248	.....	.....	37	.....	.....	285	244	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hancock	48	.....	3	115	37	.....	5	10	3	7	57	58	1	15	41	11	.....	1	15	41	11	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hardin	41	1	3	87	26	5	8	1	2	2	44	43	4	10	48	15	11	4	10	48	15	11	.....	.....	.....	.....	.....	.....	.....	.....
Harrisol17	1	117	8	2	11	21	96	10	29	28	10	29	28

Henry.....	26	29	1	.....	56	31	2	.....	2	.....	7	.....	35	21	3	4	37	8	4
Highland.....	69	51	2	.....	122	25	16	.....	16	.....	.....	.....	62	60	9	17	54	42	13
Hocking.....	46	42	.....	.....	90	37	.....	.....	.....	.....	.....	.....	50	40	21	2	50	17	.....
Holmes.....	57	23	.....	.....	84	11	.....	.....	.....	.....	.....	.....	29	55	11	.....	53	20	.....
Huron.....	83	40	4	.....	127	16	.....	.....	.....	.....	.....	.....	33	94	3	1	72	51	.....
Jackson.....	76	108	.....	.....	186	54	15	.....	15	.....	10	.....	120	66	13	80	78	15	64
Jefferson.....	90	63	3	.....	161	65	.....	.....	.....	.....	1	.....	75	86	12	9	108	27	34
Knox.....	86	15	1	.....	103	13	2	.....	2	.....	1	.....	19	84	6	12	50	53	8
Lake.....	37	38	.....	.....	76	15	.....	.....	.....	.....	.....	.....	17	31	1	2	20	8	.....
Lawrence.....	63	80	.....	.....	152	73	.....	.....	.....	.....	.....	.....	83	69	7	2	42	17	.....
Licking.....	105	36	.....	.....	143	27	.....	.....	.....	.....	4	.....	41	102	8	3	96	36	2
Logan.....	57	24	.....	.....	82	6	.....	.....	.....	.....	.....	.....	28	54	1	6	32	15	.....
Lorain.....	56	34	2	.....	94	18	1	.....	1	.....	.....	.....	29	65	1	9	66	16	10
Lucas.....	99	98	.....	.....	201	92	2	.....	2	.....	.....	.....	116	85	11	7	81	70	.....
Madison.....	63	51	.....	.....	120	28	.....	.....	.....	.....	1	.....	49	71	15	13	54	38	.....
Mahoning.....	138	69	5	.....	219	53	.....	.....	.....	.....	.....	.....	81	138	5	2	80	58	6
Marion.....	60	43	1	.....	108	32	.....	.....	.....	.....	.....	.....	44	67	9	15	33	36	.....
Medina.....	63	15	.....	.....	79	6	.....	.....	.....	.....	.....	.....	19	60	2	.....	30	45	.....
Meigs.....	74	22	3	.....	100	23	.....	.....	.....	.....	.....	.....	34	66	6	1	64	40	.....
Mercer.....	26	22	1	.....	50	13	.....	.....	.....	.....	.....	.....	27	23	2	.....	9	6	.....
Miami.....	125	98	.....	.....	226	81	.....	.....	.....	.....	4	.....	126	110	14	4	136	76	18
Monroe.....	44	26	1	.....	72	18	.....	.....	.....	.....	3	.....	31	41	8	3	23	24	.....
Montgomery.....	238	78	10	.....	334	.....	.....	.....	.....	.....	.....	.....	45	289	5	.....	200	89	.....
Morgan.....	61	18	.....	.....	79	3	.....	.....	.....	.....	.....	.....	12	63	.....	.....	38	25	.....
Morrow.....	50	16	.....	.....	67	12	.....	.....	.....	.....	.....	.....	16	51	2	7	27	31	4
Muskingum.....	184	154	5	.....	351	138	.....	.....	.....	.....	.....	.....	185	166	5	3	203	142	.....
Noble.....	52	18	.....	.....	72	5	.....	.....	.....	.....	.....	.....	20	52	13	.....	16	56	9
Ottawa.....	43	48	1	.....	92	30	.....	.....	.....	.....	.....	.....	50	42	13	10	34	5	10
Paulding.....	25	29	.....	.....	54	21	.....	.....	.....	.....	.....	.....	38	22	2	6	12	3	7
Perry.....	59	29	.....	.....	93	.....	23	.....	23	.....	.....	.....	38	55	7	7	48	44	3
Pickaway.....	115	73	2	.....	190	55	.....	.....	.....	.....	.....	.....	70	120	.....	57	93	40	.....
Pike.....	53	26	.....	.....	79	15	4	.....	4	.....	2	.....	29	60	11	25	28	9	26
Portage.....	77	28	1	.....	106	12	.....	.....	.....	.....	4	.....	34	72	.....	.....	38	65	.....
Preble.....	70	30	.....	.....	103	29	.....	.....	.....	.....	.....	.....	39	64	5	2	48	39	.....
Putnam.....	51	32	.....	.....	83	21	.....	.....	.....	.....	11	.....	49	34	10	8	37	28	8
Richland.....	104	45	.....	.....	151	48	.....	.....	.....	.....	2	.....	56	95	2	.....	64	29	.....
Ross.....	193	128	.....	.....	327	146	.....	.....	.....	.....	1	.....	174	153	33	103	150	35	60
Sandusky.....	76	59	2	.....	138	23	.....	.....	.....	.....	.....	.....	39	99	4	4	91	39	1
Scioto.....	73	49	.....	.....	127	56	.....	.....	.....	.....	.....	.....	70	57	.....	.....	.....	.....	.....
Seneca.....	91	55	7	.....	153	50	.....	.....	.....	.....	23	.....	81	72	1	1	40	31	1

TABLE J—Continued.

Counties.	Received during year.				Discharged during year.							Number remaining September 1, 1887.	Ages.				Number between 5 and 16 years of sound mind and body.
	From townships.	From State institutions.	Born.	Total.	Discharged.	"Placed" by indenture or adoption.	Ran away.	Died.	Sent to other counties.	Sent to State institutions.	Total.		Under 5 years.	Between 5 and 16 years.	Between 16 and 60 years.	Over 60 years.	
Shelby	45	.....	2	109	43	2	4	8	.....	.....	57	52	7	10	32	16	6
Stark	108	5	5	313	101	1	4	18	3	5	132	181	5	4	214	74	5
Summit	60	3	3	183	34	.....	.....	5	1	1	41	142	3	.....	150	23	.....
Trumbull	27	3	.....	115	22	2	.....	12	.....	1	37	78	3	1	79	33	.....
Tuscarawas	53	10	.....	164	54	.....	1	5	1	1	62	102	2	2	106	43	.....
Union	30	.....	.....	73	11	.....	.....	7	.....	4	22	51	.....	.....	54	19	.....
Van Wert	34	.....	.....	89	41	10	5	3	.....	2	61	28	28	23	37	19	12
Vinton	26	.....	2	74	22	.....	1	1	.....	6	30	44	10	.....	54	10	.....
Warren	202	1	.....	340	172	.....	.....	26	.....	8	206	135	.....	.....	107	44	.....
Washington	69	5	4	180	35	.....	3	8	12	4	62	118	26	9	95	36	.....
Wayne	47	.....	1	121	25	.....	3	10	.....	2	40	81	.....	.....	49	32	.....
Williams	23	.....	1	64	16	3	.....	3	.....	.....	22	42	11	11	18	18	11
Wood	56	.....	2	126	27	11	2	6	.....	3	49	77	6	20	56	32	.....
Wyandot	62	1	.....	125	48	.....	2	7	3	9	69	56	.....	25	70	30	25
Totals	4,942	489	233	13,422	3,966	147	229	912	221	313	5,788	7,634	673	939	5,966	3,371	655

TABLE J—Continued.

Counties.	Causes of pauperism.								Nativity.					
	Insane.	Epileptic.	Idiotic.	Disabled by age.	Disabled by disease.	Crippled.	Deformed.	Blind.	Number of lying-in cases.	Number not disabled from any cause.	Native birth.	Foreign birth.	Not having legal settlement in county.	Not having legal settlement in State.
Adams .....	.....	10	2	.....	40	.....	2	2	12	2	42	.....	.....	.....
Allen	9	6	17	10	5	1	1	2	.....	27	67	9	.....	1
Ashland.....	12	9	18	8	6	.....	2	1	.....	4	47	6	.....	.....
Ashtabula.....	29	6	20	10	32	2	6	1	1	15	94	25	.....	3
Athens	20	9	2	5	4	2	.....	3	.....	26	59	7	.....	.....
Auglaize	4	4	5	5	1	1	2	3	.....	24	44	5	.....	.....
Belmont.....	23	7	16	66	23	.....	8	8	11	67	181	48	.....	.....
Brown	20	7	1	15	2	.....	4	1	.....	47	91	6	.....	.....
Butler.....	33	5	8	28	24	2	.....	5	.....	109	99	115	15	.....
Carroll	7	.....	4	19	5	.....	1	1	.....	3	30	6	3	.....
Champaign	17	5	3	12	1	.....	.....	2	.....	68	58	10	.....	.....
Clarke	56	9	4	66	68	2	.....	3	5	11	150	80	2	.....
Clermont	22	5	3	7	3	.....	.....	2	3	50	125	19	2	.....
Clinton.....	13	8	6	16	2	.....	2	6	.....	12	60	5	.....	.....
Columbiana	69	7	15	23	8	.....	5	5	6	8	99	40	2	5
Coshocton ..	8	4	23	20	6	.....	2	5	2	2	67	3	2	.....
Crawford.....	108	18	8	1	.....	.....	.....	.....	.....	.....	38	29	2	.....
Cleveland City.....	259	15	11	84	150	11	1	10	21	.....	204	608	106	.....
Darke	14	15	19	85	85	4	5	5	5	177	72	42	10	2

TABLE J—Continued.

Counties.	Causes of pauperism.								Nativity.					
	Insane.	Epileptic.	Idiotic.	Disabled by age.	Disabled by disease.	Crippled.	Deformed.	Blind.	Number of lying-in cases.	Number not disabled from any cause.	Native birth.	Foreign birth.	Not having legal settlement in county.	Not having legal settlement in State.
Defiance	5	2	2	12	3	3	2	1	.....	20	35	15	.....	.....
Delaware.....	36	4	8	26	2	1	.....	3	.....	80	74	6	.....	.....
Erie.....	24	10	3	21	6	2	2	6	4	23	41	70	.....	.....
Fairfield.....	30	5	12	32	.....	1	1	2	.....	49	84	26	.....	.....
Fayette	4	5	1	24	13	2	1	2	.....	126	163	15	1	2
Franklin	86	20	21	76	9	5	1	18	12	38	169	147	3	.....
Fulton	5	1	9	14	9	1	1	3	.....	12	65	56	9	1
Gallia .....	.....	10	1	10	6	.....	.....	.....	4	39	131	2	.....	.....
Geauga.....	9	1	5	10	1	1	.....	1	.....	10	28	10	.....	.....
Greene.....	21	9	16	38	12	1	1	2	4	127	210	21	6	4
Guernsey	9	3	8	5	9	2	3	.....	1	7	63	3	1	1
Hamilton .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	127	117	.....	.....
Hancock	14	5	3	12	1	.....	1	4	.....	23	52	6	.....	.....
Hardin.....	9	3	11	10	1	.....	.....	1	.....	19	73	15	2	1
Harrison	18	7	11	2	.....	2	2	2	.....	.....	.....	4	2	.....
Henry	2	3	1	5	2	.....	.....	1	.....	42	46	10	.....	.....
Highland	15	4	19	27	24	6	.....	3	.....	24	110	12	9	6
Hocking.....	1	4	1	9	6	.....	2	3	2	64	.....	.....	.....	.....
Holmes	12	5	.....	19	4	.....	2	.....	4	26	29	45	10	.....

TABLE J—Concluded.

Counties.	Causes of pauperism.								Nativity.					
	Insane.	Epileptic.	Idiotic.	Disabled by age.	Disabled by disease.	Crippled.	Deformed.	Blind.	Number of lying-in cases.	Number not disabled from any cause.	Native birth.	Foreign birth.	Not having legal settlement in county.	Not having legal settlement in State.
Tuscarawas.....	20	3	8	13	14	1	2	5	11	67	68	5	.....	.....
Union.....	13	6	6	10	5	.....	1	1	.....	.....	25	5	.....	.....
Van Wert	3	4	4	3	.....	1	1	2	.....	10	61	14	.....	.....
Vinton	1	2	7	6	11	4	.....	4	.....	39	116	19	.....	.....
Warren	25	5	5	20	7	2	2	7	1	73	155	12	.....	.....
Washington	19	5	15	9	12	3	5	3	.....	55	55	26	.....	.....
Wayne.....	17	10	4	32	18	.....	1	2	.....	.....	55	11	.....	.....
Williams	9	1	7	7	2	.....	1	2	1	19	55	19	.....	.....
Wood	8	6	21	33	9	3	2	2	2	.....	74	40	.....	.....
Wyandot.....	11	3	3	30	26	30	2	4	16	.....	85	.....	.....	.....
Totals.....	948	549	640	1754	1391	154	141	225	238	2585	6579	3218	243	106

TABLE K.—SHOWING CLASSIFIED STATEMENT OF RECEIPTS AND EXPENDITURES OF COUNTY INFIRMARIES.

Counties.	Salaries and wages.					Total.
	Superintendent	Per diem and expenses of directors.	Other employees.	Medical attendance.		
Adams	\$350 00	\$300 00	\$185 09	\$62 50	\$897 59	
Allen	648 00	415 00	800 00	100 00	1,963 00	
Ashland	650 00	667 40	379 74	84 38	1,781 52	
Ashtabula	800 00	.....	1,460 30	466 33	2,726 63	
Athens	500 00	150 00	822 00	296 00	1,768 00	
Auglaize	650 00	471 10	342 00	93 48	1,556 58	
Belmont	1,000 00	403 92	359 03	50 00	1,812 95	
Brown	800 00	1,100 00	512 00	176 25	2,588 25	
Butler	727 98	1,479 50	1,538 51	156 50	3,902 49	
Carroll	300 00	300 00	277 65	131 00	1,008 65	
Champaign	1,100 00	530 00	134 00	192 00	1,956 00	
Clarke	700 00	800 00	1,212 00	300 00	3,012 00	
Clermont	900 00	582 00	299 60	323 74	2,105 34	
Clinton	575 00	300 40	627 15	83 50	1,586 05	
Columbiana	700 00	490 00	1,606 44	185 00	2,981 44	
Coshocton	591 62	714 75	604 00	100 00	2,010 37	
Crawford	700 00	657 50	809 12	406 90	2,573 52	
Cuyahoga	800 00	.....	8,752 44	1,000 00	10,552 44	
Darke	800 00	885 00	615 00	250 00	2,550 00	
Defiance	320 00	.....	380 00	30 82	730 82	
Delaware	650 00	689 50	1,038 38	273 20	2,651 08	
Erie	700 00	881 35	603 25	200 00	2,384 60	
Fairfield	1,000 00	450 00	552 00	150 00	2,152 00	
Fayette	570 00	649 00	650 36	182 00	2,051 36	
Franklin	1,000 00	1,642 00	4,259 13	1,000 00	7,901 13	
Fulton	725 00	270 45	615 75	100 00	1,711 20	

TABLE K—Continued.

Counties.	Salaries and wages.				
	Superintendent.	Per diem and expenses of directors.	Other employees.	Medical attendance.	Total.
Gallia.....	\$325 00	\$165 00	\$146 15	\$106 60	\$742 75
Geauga.....	600 00	231 00	820 25	191 75	1,843 00
Greene.....	1,000 00	421 00	2,740 25	300 00	4,461 25
Guernsey	600 00	746 65	437 90	90 00	1,874 55
Hamilton.....	1,200 00	.....	.....	500 00	1,700 00
Hancock	500 00	375 00	328 00	96 00	1,299 00
Hardin.....	720 00	179 00	738 69	89 00	1,726 69
Harrison	600 00	360 00	250 00	100 00	1,310 00
Henry	606 00	365 00	223 00	71 52	1,265 52
Highland	525 00	356 50	374 65	57 00	1,313 15
Hocking.....	400 00	395 65	592 47	168 30	1,556 42
Holmes	600 00	125 00	536 23	100 00	1,361 23
Huron	800 00	495 00	975 54	97 50	2,368 04
Jackson	500 00	287 50	486 10	84 75	1,358 35
Jefferson	500 00	312 52	396 00	160 00	1,368 52
Knox	600 00	.....	.....	175 00	775 00
Lake	600 00	125 00	642 00	150 00	1,517 00
Lawrence	500 00	425 00	247 10	461 63	1,633 73
Licking	900 00	480 65	829 55	145 00	2,355 20
Logan.....	682 00	.....	132 00	122 50	936 50
Lorain	720 00	212 10	710 13	160 75	1,802 98
Lucas	1,000 00	1,769 00	610 10	225 00	3,604 10
Madison.....	610 00	460 95	600 13	315 20	1,986 28
Mahoning	737 50	.....	1,611 46	365 00	2,713 96
Marion	720 00	.....	.....	.....	720 00
Medina	550 00	.....	832 19	40 00	1,422 19

Meigs	400 00	424 70	258 00	25 00	1,107 70
Mercer	500 00	400 00	480 00	70 00	1,450 00
Miami	950 00	432 75	1,328 50	150 00	2,861 25
Monroe .....	.....	295 50	.....	.....	295 50
Montgomery	1,000 00	.....	380 00	500 00	1,880 00
Morgan	500 00	172 50	454 03	100 00	1,226 50
Morrow	632 50	338 75	572 00	100 00	1,643 25
Muskingum	700 00	660 00	1,797 75	100 00	3,257 75
Noble	875 00	.....	148 50	46 30	1,069 80
Ottawa	500 00	.....	400 00	150 00	1,050 00
Paulding	350 00	282 50	231 00	100 00	963 50
Perry	500 00	895 00	320 00	80 00	1,795 00
Pickaway	1,080 00	.....	1,472 00	196 00	2,748 00
Pike	418 65	340 00	333 75	97 25	1,189 65
Portage	962 50	388 00	827 96	83 25	2,261 71
Preble	700 00	.....	801 40	89 50	1,590 90
Putnam	900 00	.....	.....	400 00	1,300 00
Richland	720 00	.....	756 00	229 60	3,790 45
Ross	758 32	2,084 85	2,281 25	133 14	3,704 21
Sandusky	800 00	531 50	761 94	355 00	2,741 94
Scioto	600 00	825 00	475 00	240 00	1,315 00
Seneca	712 50	.....	478 65	233 04	2,333 34
Shelby	800 00	909 15	1,228 80	125 00	2,478 05
Stark	800 00	324 25	1,983 50	200 00	3,538 50
Summit	800 00	555 00	1,430 00	162 50	3,135 00
Trumbull	730 00	742 50	869 15	227 50	2,326 65
Tuscarawas	675 00	500 00	595 00	100 00	2,111 85
Union	538 00	741 85	560 66	57 00	1,461 31
Van Wert	650 00	305 65	1,873 16	100 00	2,834 16
Vinton	493 75	211 00	290 75	132 09	1,562 78
Warren	550 00	646 19	451 10	100 00	1,101 10
Washington	525 00	.....	847 27	158 00	1,680 27
Wayne	750 00	150 00	1,358 25	150 00	2,590 75
Williams	620 00	332 50	731 47	28 25	1,379 72
Wood	750 00	.....	450 00	140 00	1,340 00
Wyandot	600 00	268 50	518 40	125 00	1,511 90
Totals	\$59,194 32	\$36,874 03	\$72,440 04	\$16,049 52	\$184,557 91

TABLE K—Continued.

Counties.	Expended for—							Total.	Total current ex- penses.
	Groceries and provisions.	Fuel and light.	Clothing.	Furniture.	Ordinary repairs.	Other ordinary expenses.			
Adams .....	.....	.....	.....	.....	.....	.....	\$2,523 34	\$3,420 93
Allen	\$675 44	\$300 00	\$609 45	\$129 45	\$800 00	\$8,453 74	10,968 08	12,931 08	
Ashland.....	259 84	124 98	245 16	27 95	369 63	28 80	1,056 36	2,837 88	
Ashtabula.....	2,833 32	557 51	1,168 61	827 37	275 50	820 27	6,482 58	9,209 21	
Athens.....	2,352 50	304 85	779 35	172 47	857 27	.....	4,466 44	6,234 44
Auglaize	182 C1	25 00	259 02	.....	185 40	529 85	1,181 28	2,737 86
Belmont.. ..	3,474 94	1,015 42	975 16	463 27	956 12	2,046 18	8,931 09	10,744 04	
Brown	1,770 57	590 80	300 00	.....	100 00	.....	2,761 37	5,349 62
Butler.. ..	3,796 15	1,748 60	642 50	6 00	186 44	4,165 25	10,544 94	14,447 43	
Carroll	381 14	112 20	337 95	42 40	256 58	444 43	1,574 70	2,583 35	
Champaign .....	.....	549 20	320 85	40 75	511 03	183 49	1,605 32	3,561 32
Clarke	3,565 00	815 00	1,125 00	116 00	160 00	1,000 00	6,781 00	9,793 00	
Clermont	2,490 62	603 00	1,104 94	90 00	200 00	528 06	5,016 62	7,121 96	
Clinton.....	629 02	29 31	95 05	118 11	311 50	966 78	2,149 77	3,735 82	
Columbiana	1,668 21	607 52	123 25	12 00	306 94	9,882 97	12,600 89	15,582 33	
Coshocton	946 68	233 07	269 85	.....	597 72	730 26	2,777 58	4,787 95
Crawford	941 44	201 92	272 80	85 90	218 52	638 73	2,359 31	4,932 83	
Cuyahoga ..	16,861 62	3,308 15	4,172 56	476 24	3,327 24	6,894 58	35,040 39	45,592 83	
Darke.....	1,350 00	250 00	225 00	175 00	750 00	975 00	3,725 00	6,275 00	
Defiance.....	415 75	80 57	58 90	47 25	186 87	931 44	1,720 78	2,451 60	
Delaware.....	1,434 76	47 79	737 60	91 23	619 81	1,598 37	4,529 56	7,180 64	
Erie.. ..	1,065 48	826 58	226 31	611 09	937 57	4,759 69	8,426 72	10,811 32	
Fairfield.....	3,572 00	384 00	1,075 00	290 00	600 00	1,051 70	6,972 70	9,124 70	
Fayette ..	796 19	298 41	135 90	114 00	93 48	2,616 41	4,054 39	6,105 75	
Franklin	10,748 17	1,735 20	1,624 21	.....	1,305 38	20,703 55	36,116 51	44,017 64
Fulton	636 04	74 93	306 99	51 47	356 15	1,241 44	2,667 02	4,378 22	

Gallia	1,154 47	202 06	349 65	.....	310 32	224 07	2,240 57	2,983 32
Geauga.....	634 36	382 18	737 70	543 20	692 11	1,057 71	4,047 26	5,890 26
Greene.....	4,795 45	1,142 19	1,079 55	43 00	1,474 49	2,485 79	11,020 47	15,481 72
Guernsey	897 79	211 65	249 53	6 00	725 89	1,143 90	3,234 76	5,109 31
Hamilton	3,524 03	5,154 93	1,206 44	.....	.....	19,584 89	29,470 29	31,170 29
Hancock	381 76	225 00	417 98	32 00	182 82	50 00	1,289 56	2,588 56
Hardin	351 50	393 65	100 91	10 60	95 18	2,786 04	3,737 88	5,464 57
Harrison	611 16	.....	664 11	.....	.....	138 59	1,413 86	2,723 86
Henry	446 42	60 25	275 28	24 00	299 19	598 38	1,703 52	2,969 04
Highland	1,385 06	591 94	1,153 76	103 42	311 74	1,445 83	4,991 75	6,304 90
Hocking.....	341 89	188 17	115 73	4 00	128 30	.....	778 09	2,334 51
Holmes	300 00	80 00	200 00	25 00	119 00	50 98	774 98	2,136 21
Huron	1,148 48	771 97	1,108 34	290 90	1,348 00	1,084 52	5,752 21	8,120 25
Jackson	1,698 76	582 51	278 97	18 20	186 36	2,182 25	4,947 05	6,305 40
Jefferson	2,639 34	469 82	120 05	.....	.....	6,494 21	9,723 42	11,091 94
Knox	981 18	303 19	359 97	.....	39 45	.....	1,683 79	2,458 79
Lake	175 00	325 00	50 00	.....	100 00	.....	650 00	2,167 00
Lawrence	1,793 37	275 59	776 32	197 85	484 71	902 39	4,430 23	6,063 96
Licking	2,161 42	204 95	631 60	227 01	200 00	1,109 53	4,534 51	6,789 71
Logan.....	1,786 84	327 60	234 35	214 50	218 00	3,269 00	6,050 29	6,986 79
Lorain	917 31	425 60	332 04	.....	214 25	1,000 00	2,889 20	4,692 18
Lucas	2,176 40	330 19	827 86	253 34	454 97	1,599 76	5,642 52	9,246 62
Madison.....	2,131 73	499 13	129 90	36 50	94 95	1,795 12	4,687 33	6,673 61
Mahoning ..	2,856 54	770 14	767 63	66 00	.....	14,722 89	19,183 20	21,897 16
Marion .....	.....	.....	.....	.....	.....	.....	5,052 16	5,772 16
Medina	248 53	250 88	272 12	126 00	466 66	.....	1,364 19	2,786 38
Meigs	1,500 00	200 00	500 00	.....	100 00	247 80	2,547 80	3,655 50
Mercer	300 00	10 00	100 00	60 00	50 00	.....	520 00	1,970 00
Miami... ..	1,801 91	1,560 68	238 41	304 45	2,000 00	7,047 00	12,852 45	15,713 70
Monroe ..	.....	.....	.....	.....	.....	.....	2,028 44	2,323 94
Montgomery	8,000 00	1,600 00	2,000 00	800 00	2,000 00	3,000 00	17,400 00	19,280 00
Morgan	294 55	.....	32 50	.....	40 50	50 00	1,335 57	2,562 07
Morrow	454 60	319 52	90 97	12 50	65 00	1,049 09	1,991 68	3,634 93
Muskingum	6,521 90	1,438 34	1,663 41	1,220 60	178 43	1,322 65	12,345 33	15,603 08
Noble	800 00	82 57	98 77	.....	85 00	3,605 68	4,672 02	5,741 82
Ottawa .....	.....	.....	.....	.....	.....	.....	2,391 55	3,441 55
Paulding .....	.....	.....	.....	.....	.....	.....	.....	963 50
Perry ..	2,519 15	109 63	426 84	85 61	163 62	3,639 89	6,944 74	8,739 74
Pickaway	3,881 77	986 51	1,123 62	238 69	913 91	699 73	7,844 23	10,592 23
Pike	446 55	230 16	460 02	39 06	227 51	457 18	1,860 48	3,050 13

TABLE K—Continued.

Counties.	Expended for—							Total current ex- penses.
	Groceries and provisions.	Fuel and light.	Clothing.	Furniture.	Ordinary repairs.	Other ordinary expenses.	Total.	
Portage	\$461 03	\$204 68	\$212 45	\$78 60	\$529 75	\$620 82	\$2,106 33	\$4,368 04
Preble	842 04	133 08	480 43	.....	207 37	990 54	2,653 46	4,244 36
Putnam	374 72	19 22	683 72	50 00	49 73	1,596 43	2,773 82	4,073 82
Richland	2,379 96	798 60	732 65	81 00	403 70	1,021 92	5,417 83	9,208 28
Ross	3,688 13	1,820 48	460 95	15 70	2,679 75	6,141 91	14,806 92	18,511 13
Sandusky	1,347 27	464 85	683 28	109 00	709 26	2,173 99	5,487 65	8,229 59
Scioto	661 00	180 00	328 32	30 00	171 00	982 80	2,353 12	3,668 12
Seneca	1,244 85	223 44	864 16	.....	.....	2,484 44	4,816 89	7,150 23
Shelby	1,506 31	648 69	526 39	58 00	302 23	214 58	3,256 20	5,734 25
Stark	3,018 47	1,372 00	1,377 87	387 90	535 80	2,657 62	9,349 66	12,888 16
Summit	1,135 00	575 00	250 00	135 00	303 69	.....	2,398 69	5,533 69
Trumbull	770 84	250 00	317 54	25 25	1,008 71	1,828 63	4,200 97	6,527 62
Tuscarawas	639 67	309 13	437 68	12 00	.....	.....	1,398 48	3,510 33
Union	622 74	187 97	415 14	18 25	202 85	715 95	2,162 90	3,624 21
Van Wert	177 47	.....	52 90	.....	.....	.....	230 37	3,064 53
Vinton	679 59	119 31	478 86	209 83	175 64	1,169 91	2,833 14	4,395 92
Warren	2,021 31	1,091 14	644 37	.....	154 00	1,110 63	5,021 45	6,122 55
Washington	1,179 01	114 74	696 26	30 38	320 82	1,721 97	4,063 18	5,743 45
Wayne	538 03	240 15	544 61	445 55	1,312 29	451 71	3,532 34	6,123 09
Williams	756 75	.....	290 41	2 00	11 50	910 19	1,970 85	3,350 57
Wood	1,187 40	238 40	682 76	103 52	310 43	760 75	3,283 26	4,623 26
Wyandot	544 11	191 56	565 91	10 55	415 36	830 72	2,558 21	4,070 11
Totals	\$150,681 81	\$44,712 45	\$48,092 40	\$10,672 91	\$38,242 39	\$184,421 37	\$489,736 84	\$674,294 75

TABLE K—Continued.

Counties.	Received from—							Total.
	Levy for poor fund.	Dow law tax.	Sale of farm produce and stock.	Sale of other articles.	Expenses of inmates refunded by other counties.	Expenses of inmates paid by themselves or friends.	All other sources.	
Adams	\$3,367 63	.....	\$28 30	.....	\$25 00	.....	.....	\$3,440 93
Allen .....	.....	.....	655 69	.....	10 58	\$176 64	\$12,088 17	12,931 08
Ashland .....	.....	.....	645 15	.....	.....	324 29	2,837 88	3,807 92
Ashtabula	9,209 21	.....	734 62	.....	285 00	480 78	.....	10,709 61
Athens .....	.....	\$13,314 29	1,756 00	.....	73 00	.....	.....	15,143 29
Auglaize	2,244 32	8,624 93	822 70	.....	.....	.....	.....	11,691 95
Belmont	15,701 39	.....	588 10	\$137 70	42 00	110 00	.....	16,579 19
Brown	10,340 44	.....	99 00	.....	30 85	.....	.....	10,470 29
Butler .....	.....	.....	1,750 67	31 99	44 17	283 00	.....	2,109 83
Oarroll	4,152 29	1,800 31	727 54	59 61	50 00	543 96	.....	7,333 71
Champaign	4,183 56	.....	568 35	.....	112 12	82 02	.....	4,946 05
Clarke	9,550 18	8,295 64	65 00	.....	560 00	250 00	.....	18,720 82
Clermont	10,906 88	.....	75 25	.....	135 00	175 55	.....	11,292 68
Clinton	3,435 42	.....	1,320 07	23 45	358 50	93 00	.....	5,230 44
Columbiana	4,810 44	6,930 15	230 31	.....	108 70	1,604 24	1,898 49	15,582 33
Coshocton	3,761 35	1,026 60	792 43	.....	65 00	297 65	.....	5,943 03
Crawford	3,479 32	5,138 86	841 01	.....	47 60	52 03	.....	9,558 82
Cleveland City	14,625 15	57,500 00	430 24	.....	14,696 10	2,399 62	4,019 62	93,670 73
Darke	6,275 00	.....	520 00	60 00	.....	.....	.....	6,855 00
Defiance	2,451 60	.....	530 48	.....	58 10	162 06	116 71	3,318 95
Delaware	5,694 60	844 09	.....	.....	91 60	540 35	.....	7,170 64
Erie	14,707 30	16,606 64	285 80	.....	84 80	485 10	.....	32,169 64
Fairfield	11,664 77	2,636 69	306 71	.....	.....	218 50	.....	14,826 67
Fayette	1,243 28	.....	2,126 83	71 45	1,272 55	57 15	125 91	4,897 17
Franklin .....	.....	41,975 82	774 58	260 75	465 28	543 66	1,941 07	45,961 16
Fulton	1,770 69	.....	495 32	7 45	47 10	600 00	61 59	2,982 15

TABLE K—Continued.

Counties.	Received from—								Total.
	Levy for poor fund.	Dow law tax.	Sale of farm produce and stock.	Sale of other articles.	Expenses of inmates refunded by other counties.	Expenses of inmates paid by themselves or friends.	All other sources.		
Gallia .....	.....	.....	.....	.....	.....	.....	\$ 2,983 32	\$2,983 32
Geauga.....	\$3,059 11	\$1,526 83	\$53 83	.....	\$95 00	\$420 35	.....	5,155 12
Greene.....	17,321 77	3,010 35	365 92	.....	21 50	806 34	59 30	21,585 18
Guernsey	9,190 90	1,899 64	455 28	\$60 61	120 99	564 45	15 65	12,307 52	
Hamilton .....	.....	.....	.....	.....	.....	.....	3,170 29	31,170 29
Hancock	5,870 34	3,689 23	1,386 26	.....	65 95	.....	.....	11,011 78
Hardin.....	7,193 63	2,776 87	1,077 54	.....	196 41	50 50	.....	11,294 95
Harrison	2,045 07	414 99	153 80	.....	.....	110 00	.....	2,723 86
Henry	4,059 72	5,376 31	815 53	12 07	66 73	49 10	.....	10,379 46
Highland.....	11,921 21	1,365 71	294 78	.....	133 00	22 95	.....	13,737 65
Hocking.....	3,979 57	.....	320 00	.....	217 30	.....	49 70	4,566 57
Holmes	3,559 48	3,317 85	987 18	157 76	104 20	215 50	.....	8,341 97
Huron	8,120 25	.....	368 44	21 00	166 44	345 10	.....	9,021 23
Jackson	4,437 19	1,580 71	156 50	24 75	459 04	56 00	.....	6,714 19
Jefferson	8,820 28	7,527 56	365 82	.....	.....	.....	.....	16,703 66
Knox .....	.....	2,223 82	609 00	.....	.....	.....	.....	2,832 82
Lake	3,203 44	2,111 82	891 35	.....	.....	260 00	.....	6,446 61
Lawrence .....	.....	.....	.....	.....	.....	.....	6,063 96	6,063 96
Licking	5,625 15	3,781 34	143 00	85 54	131 00	.....	.....	9,766 03
Logan .....	.....	9,643 39	641 00	20 00	299 00	104 00	.....	10,707 39
Lorain	1,292 56	.....	1,060 94	.....	6 00	225 62	.....	3,585 12
Lucas .....	.....	25,786 64	294 45	.....	.....	.....	.....	26,081 09
Madison .....	.....	6,212 66	427 13	.....	108 75	55 00	.....	6,803 54
Mahoning.....	.....	.....	.....	.....	.....	.....	21,897 16	21,897 16
Marion .....	.....	.....	1,972 62	.....	.....	.....	3,799 54	5,772 16
Medina	8,664 58	.....	798 89	.....	57 90	337 00	484 13	10,342 50

BOARD OF STATE CHARITIES.

Meigs.....	4,614 28	2,340 16	20 00	368 92	82 17	2,212 05	4,267 86	6,974 44
Mercer.....	3,881 33	5,334 06	334 84	.....	.....	.....	.....	9,919 15
Miami.....	11,445 84	.....	555 00	.....	.....	.....	2,323 94	18,562 92
Monroe.....	.....	.....	.....	.....	.....	.....	19,280 00	19,280 00
Montgomery.....	.....	.....	.....	.....	.....	.....	.....	2,918 29
Morgan.....	2,562 07	.....	202 67	.....	38 10	115 45	36 37	5,827 29
Morrow.....	.....	5,604 92	.....	.....	42 00	144 00	34 00	24,999 90
Muskingum.....	21,143 75	2,783 65	453 27	.....	440 98	144 25	35 37	5,741 69
Noble.....	3,428 01	1,509 00	680 82	.....	88 49	.....	3,441 55	3,788 10
Ottawa.....	.....	.....	346 55	.....	.....	.....	963 50	1,313 15
Paulding.....	.....	.....	.....	.....	350 00	.....	.....	13,949 86
Perry.....	7,582 81	5,456 08	550 67	128 30	143 66	88 34	.....	10,692 23
Pickaway.....	6,447 52	3,760 88	184 59	.....	186 24	113 00	.....	4,515 10
Pike.....	2,625 53	1,250 00	591 80	.....	47 77	.....	.....	1,706 20
Portage.....	147 54	.....	1,149 36	.....	7 70	226 60	175 00	7,107 38
Preble.....	6,498 74	.....	296 14	.....	.....	.....	312 50	5,557 11
Putnam.....	2,452 47	.....	500 70	.....	.....	.....	79 00	23,148 04
Richland.....	19,355 96	2,421 19	167 09	.....	103 75	104 00	348 31	30,467 19
Ross.....	22,407 43	2,549 21	1,338 98	142 15	623 47	25 00	146 62	8,581 14
Sandusky.....	4,543 18	5,619 86	501 00	.....	787 15	312 90	192 43	3,668 12
Scioto.....	.....	2,861 41	.....	.....	170 22	.....	3,668 12	7,294 51
Seneca.....	3,089 87	4,006 89	40 00	.....	25 85	131 90	.....	6,724 30
Shelby.....	.....	6,344 45	301 32	31 88	46 65	.....	.....	2,627 31
Stark.....	.....	.....	450 00	.....	209 00	1,368 81	600 00	1,888 50
Summit.....	.....	.....	481 00	.....	524 01	883 49	.....	21,194 13
Trumbull.....	11,776 96	8,112 11	1,202 27	.....	102 79	271 25	.....	16,927 40
Tuscarawas.....	8,639 87	7,532 10	420 00	.....	64 18	.....	45 11	7,019 04
Union.....	5,403 99	1,208 06	324 23	.....	178 00	148 22	.....	5,698 04
Van Wert.....	3,000 00	800 00	1,571 82	.....	.....	.....	.....	7,117 59
Vinton.....	4,643 69	1,970 01	503 89	.....	.....	397 58	.....	8,766 41
Warren.....	8,165 43	.....	144 12	14 00	45 28	.....	.....	9,319 72
Washington.....	5,593 45	.....	3,449 80	.....	276 47	.....	.....	14,252 22
Wayne.....	7,589 96	4,960 91	1,284 15	.....	86 00	331 20	.....	3,040 84
Williams.....	1,970 85	.....	863 33	.....	.....	127 78	78 88	4,623 26
Wood.....	3,608 12	.....	.....	.....	369 22	645 92	.....	14,233 30
Wyandot.....	10,721 41	2,896 46	379 68	56 55	179 20	.....	.....	.....
Totals	\$445,279 13	\$327,261 15	\$50,098 50	\$1,813 58	\$26,130 61	\$20,893 25	\$74,334 99	\$997,117 27

TABLE K—Continued.

Counties.	Amount paid into county treasury.	Average cost of sup- port per annum.	Estimated total value of pauper labor.	Total number of acres belonging to poor farm.	Number of acres improved.	Names of Superintendents.
Adams.....	.....	\$63 08	.....	116½	66½	James T. Little.
Allen.....	.....	.....	.....	.....	.....	M. V. Blair.
Ashland..	\$969 44	.....	.....	211	175	J. C. Wolf.
Ashtabula	1,500 40	70 00	.....	210	160	Lucius Winship.
Athens.....	544 70	73 00	\$100 00	129½	125	R. S. Dent.
Auglaize.....	822 70	30 33	200 00	200	120	William Metz.
Belmont.....	740 10	73 71	2,000 00	182	162	John Sidebottom.
Brown.....	.....	.....	.....	290	200	Reuben Wilson.
Butler.....	2,109 83	104 64	200 00	193	193	J. W. Kyle.
Carroll	1,381 11	46 42	200 00	346	271	Hiram Long.
Champaign .....	.....	.....	.....	.....	.....	Wilbur McDonald.
Clarke.....	9,727 82	74 75	.....	69	69	James Fleming.
Clermont	385 80	70 94	500 00	120	75	W. B. Mattox.
Clinton	1,795 02	31 29	600 00	343	338	Ralph Miller.
Columbiana	1,897 55	90 64	400 00	332	282	J. G. Flugan
Coshocton .....	.....	66 00	200 00	293	218	Hugh Gamble.
Crawford	940 64	.....	.....	293	240	George Slaybaugh.
Cuyahoga .....	.....	130 00	6,000 00	85	85	L. F. Mellen.
Darke	570 00	50 60	1,000 00	247	225	J. H. Brandon.
Defiance	867 35	46 67	250 00	260	150	J. P. Frederick.
Delaware	631 95	.....	.....	210	185	N. A. Coleman.
Erie .....	.....	.....	.....	83	83	Alexander Motry.
Fairfield .....	.....	70 00	.....	178	150	Lewis Barr.
Fayette .....	.....	67 17	.....	500	375	S. O. Wilson.
Franklin	1,154 60	100 01	500 00	98	71	H. C. Filler.

TABLE K—Concluded.

Counties.	Amount paid into county treasury.	Average cost of sup- port per annum.	Estimated total value of pauper labor.	Total number of acres belonging to poor farm.	Number of acres improved.	Names of Superintendents.
Pike	\$4,315 10	.....	.....	290	160	E. S. Tumine.
Portage .....	.....	.....	.....	300	224	J. W. McComb.
Preble	608 64	\$62 05	\$764 00	196	190	G. H. Lehman.
Putnam	683 45	72 00	.....	160	146	C. A. McDowell.
Richland	1,243 31	92 50	400 00	160	130	J. M. Hunter.
Ross	2,439 90	60 66	2,200 00	374	300	John M. Warner.
Sandusky	1,176 55	64 83	150 00	266	225	Wm. Murphy.
Scioto .....	.....	.....	.....	.....	.....	Silas Cole.
Seneca .....	.....	.....	.....	250	200	Thomas J. Lease.
Shelby .....	.....	100 60	200 00	200	200	Harvey Guthrie.
Stark	2,627 81	60 35	2,000 00	232	220	J. W. Pontius.
Summit	1,888 50	86 76	400 00	236	210	S. B. Stotler.
Trumbull	1,305 06	.....	300 00	385	385	N. A. Folsam.
Tuscarawas .....	.....	79 00	600 00	400	300	Elijah Landes.
Union	406 99	49 64	300 00	150	130	John W. Southard.
Van Wert	2,795 53	51 10	.....	320	225	J. C. Robinson.
Vinton .....	.....	97 34	.....	230	200	J. L. Turner.
Warren .....	.....	56 45	700 00	108	108	David B. Glasscock.
Washington	1,109 68	73 96	300 00	225	200	William Hill, Jr.
Wayne	1,206 93	75 59	225 00	278	250	Ezra D. McIntire.
Williams	1,069 99	.....	500 00	280	200	G. L. Laseer.
Wood .....	.....	.....	.....	160	135	Edwin Farmer.
Wyandot	615 43	65 65	200 00	280	240	Frank Shumaker.
Totals	\$90,204 78	\$70 83	\$32,242 00	18,323	15,151½	

TABLE L.—OUTDOOR RELIEF.

Counties.	Amount expended for—				No. of families relieved.	Persons relieved.		
	Physician.	Per diem and expenses of township trustees.	Supplies—food, clothing, etc.	Total		Parents and children.	Single persons.	Total.
Adams.....	\$1,301 33	.....	\$2,299 28	\$3,600 61	.....	.....	.....	.....
Allen.....	.....	.....	.....	203 33	.....	.....	.....	.....
Ashland.....	.....	.....	.....	3,701 90	.....	.....	.....	.....
Ashtabula.....	.....	.....	.....	2,978 88	.....	.....	.....	.....
Athens ..	1,000 00	\$300 00	.....	6,437 09	100	200	20	220
Auglaize ..	385 70	.....	1,811 44	2,197 14	10	55	4	59
Belmont ..	2,206 69	.....	3,312 48	5,519 17	.....	.....	.....	.....
Brown.....	2,238 52	824 19	.....	3,062 71	50	225	.....	225
Butler.....	.....	.....	.....	2,047 54	.....	.....	.....	.....
Carroll.....	200 00	.....	1,712 37	1,912 37	21	89	26	115
Champaign ..	.....	.....	.....	2,223 44	.....	.....	.....	.....
Clarke.....	669 00	538 00	4,340 00	5,547 00	365	1,522	98	1,620
Clermont ..	1,686 69	77 60	1,304 04	3,607 33	169	.....	.....	.....
Clinton.....	2,648 00	.....	3,579 53	6,227 53	120	409	33	442
Columbiana ..	719 40	.....	2,231 42	2,950 82	40	170	32	202
Coshocton ..	.....	.....	.....	3,444 38	.....	.....	.....	.....
Crawford ..	728 52	.....	1,173 00	1,901 52	27	97	32	129
Cuyahoga.....	.....	.....	20,900 63	20,900 63	1,617	6,399	69	6,468
Darke.....	1,750 00	15 00	1,175 00	2,940 00	31	115	26	141
Defiance.....	776 35	.....	2,334 68	3,111 03	24	135	9	144
Delaware ..	407 50	173 00	3,692 30	4,272 80	.....	.....	.....	.....
Erie.....	.....	.....	.....	5,835 23	.....	.....	.....	.....
Fairfield ..	3,462 48	.....	2,239 49	5,701 97	.....	.....	.....	380
Fayette.....	.....	.....	.....	6,060 51	210	545	80	625
Franklin.....	2,806 50	.....	12,882 58	15,689 08	819	4,995	257	5,252
Fulton.....	433 89	.....	720 09	1,153 98	22	90	10	100

TABLE L—Continued.

Counties.	Amount expended for—				No. of families re- lieved.	Persons relieved.		
	Physician.	Per diem and ex- penses of town- ship trustees.	Supplies—food, clothing, etc.	Total.		Parents and children.	Single persons.	Total.
Gallia.....	\$1,256 90	.....	\$2,611 27	\$3,868 17	.....	.....	.....	300
Geauga	411 25	.....	1,241 67	1,652 92	28	28	12	40
Greene	1,423 63	.....	4,419 11	5,842 74	70	280	20	300
Guernsey ..	1,505 27	.....	1,664 56	3,545 83	25	101	38	139
Hamilton ..	.....	.....	.....	5,372 74	.....	.....	.....	.....
Hancock ..	292 25	.....	283 11	575 36	20	85	.....	85
Hardin	864 08	.....	893 58	1,757 66	.....	.....	.....	.....
Harrison ..	.....	.....	.....	3,306 23	.....	.....	.....	.....
Henry	704 66	\$0 75	750 26	1,455 67	.....	.....	.....	128
Highland ..	2,267 32	.....	2,495 38	4,762 70	98	530	175	705
Hocking ..	1,935 45	5 00	974 90	2,915 35	.....	.....	.....	.....
Holmes	1,000 00	150 00	422 33	1,572 33	.....	92	.....	92
Huron .....	.....	.....	.....	3,679 85	.....	.....	.....	.....
Jackson	1,018 78	61 20	3,927 21	5,007 19	136	690	82	772
Jefferson ..	352 10	.....	3,990 39	4,342 49	65	246	8	254
Knox	1,120 35	.....	4,226 84	5,347 19	121	500	35	535
Lake	200 00	.....	1,859 52	2,059 52	25	65	10	75
Lawrence ..	.....	.....	.....	2,033 90	.....	.....	.....	.....
Licking	890 55	.....	2,731 95	3,622 50	55	.....	.....	.....
Logan .....	.....	.....	.....	.....	.....	.....	.....	.....
Lorain .....	.....	.....	.....	5,506 37	.....	.....	.....	.....
Lucas .....	.....	.....	24,448 51	24,448 51	.....	.....	.....	.....
Madison	680 15	.....	778 67	1,458 82	51	270	54	324
Mahoning ..	1,701 25	.....	5,335 26	7,036 51	90	200	27	227
Marion .....	.....	.....	.....	.....	.....	.....	.....	.....
Medina	437 25	.....	.....	437 25	26	104	9	113

TABLE M.—SHOWING NUMBER AND CLASSES OF JAIL POPULATION, COST OF MAINTENANCE.

Counties.	Prisoners under arrest during year ending June 30, 1887.			Charged with—			Sentenced to jail.	Average length of sentence— days.	Held for trial.	Insane.	Epileptic.	Total insane and epileptic.	Detained as witnesses.	Under 16 years of age.
	Males.	Females.	Total.	Felonies.	Misdemeanors.	Violation of ordinances.								
Adams	19	2	21	7	10	.....	2	12	9	1	.....	1	.....	.....
Allen	58	4	62	.....	26	.....	52	.....	2	.....	.....	.....	2	1
Ashland.....	10	.....	10	4	5	1	2	15	1	2	.....	2	.....	.....
Ashtabula.....	80	7	87	25	52	.....	14	18	26	6	1	7	3	2
Athens.....	128	1	129	22	27	40	25	15	3	.....	.....	.....	.....	2
Auglaize	33	1	34	18	5	7	9	5	22	3	.....	3	1	2
Belmont.....	153	5	158	14	134	7	100	11	14	3	.....	3	.....	2
Brown	40	5	45	15	12	.....	.....	.....	20	2	.....	13	.....	15
Butler.....	105	1	106	31	47	.....	.....	.....	16	.....	.....	2	.....	6
Carroll	64	.....	64	3	.....	8	18	30	.....	.....	.....	.....	.....	.....
Champaign.....	43	3	46	18	26	26	43	30	.....	.....	.....	.....	.....	.....
Clarke	288	22	310	75	175	35	28	30	18	1	.....	1	.....	3
Clermont.....	32	.....	32	12	14	4	.....	.....	.....	25	.....	25	.....	20
Clinton	62	3	65	22	43	.....	11	26	.....	2	.....	2	.....	.....
Columbiana	128	15	143	47	75	3	11	16	30	18	.....	18	.....	9
Coshocton.....	30	.....	30	10	20	.....	60	20	.....	.....	.....	.....	.....	5
Crawford.....	46	3	49	19	21	4	.....	.....	1	1	.....	1	1	.....
Cuyahoga	591	53	644	359	168	.....	8	30	10	5	.....	5	3	2
Darke	54	1	55	19	36	.....	7	100	30	117	.....	117	8	23

Defiance	37	4	41	13	21	.....	5	32	24	7	.....	7	.....	1
Delaware	46	5	51	22	16	.....	51	.....	28	12	.....	12	.....	2
Erie	56	8	64	20	35	9	10	15	30	3	.....	3	.....	11
Fairfield	30	1	31	9	16	6	5	10	11	3	.....	3	.....	1
Fayette	159	12	171	20	151	.....	30	3	.....	2	.....	2	.....	4
Franklin	159	14	173	120	25	.....	8	10	155	6	.....	6	.....	6
Fulton	23	2	25	14	6	.....	2	2	5	.....	.....	.....	.....	.....
Gallia	72	2	74	17	36	5	19	60	.....	2	.....	2	.....	1
Geauga	18	.....	18	4	13	.....	3	5	.....	1	.....	1	.....	.....
Greene	115	3	118	86	32	.....	4	10	66	.....	.....	.....	.....	12
Guernsey	143	10	153	.....	5	.....	.....	.....	.....	.....	.....	.....	.....	3
Hamilton	1,339	479	1,818	245	1,146	389	38	90	.....	118	.....	118	.....	20
Hancock	22	3	25	8	12	5	2	45	15	.....	.....	.....	20	1
Hardin	35	9	44	14	11	5	9	10	19	5	.....	9	.....	9
Harrison	46	4	50	6	14	30	10	10	3	2	.....	2	.....	.....
Henry	16	7	23	4	14	.....	5	17	8	5	.....	5	.....	.....
Highland	91	.....	91	7	38	43	65	15	20	1	.....	1	.....	.....
Hocking	37	3	40	20	20	.....	10	5	27	8	.....	8	.....	4
Holmes	34	1	35	13	18	.....	.....	.....	.....	3	.....	4	.....	2
Huron	27	1	28	10	18	.....	6	30	18	.....	.....	.....	1	3
Jackson	113	7	120	12	99	.....	9	10	39	10	.....	11	.....	2
Jefferson	189	11	200	20	.....	.....	.....	.....	.....	11	.....	13	.....	19
Knox	289	26	315	32	173	26	22	28	38	9	.....	9	.....	4
Lake	41	3	44	13	31	.....	.....	.....	16	4	.....	4	.....	1
Lawrence	188	9	197	42	74	81	27	10	12	6	.....	8	.....	13
Licking	62	5	67	24	36	.....	.....	.....	.....	7	.....	7	.....	5
Logan	213	3	216	16	63	137	34	5	163	2	.....	2	.....	2
Lorain	42	.....	42	13	20	6	8	5	13	2	.....	3	.....	5
Lucas	109	3	112	94	18	.....	16	30	.....	3	.....	3	.....	4
Madison	11	7	18	10	6	.....	5	6	.....	2	.....	2	.....	.....
Mahoning	123	11	134	33	90	.....	.....	.....	.....	16	.....	16	.....	6
Marion	20	2	22	6	13	.....	.....	.....	.....	.....	.....	.....	.....	2
Medina	37	5	42	5	3	.....	7	.....	.....	5	.....	6	.....	3
Meigs	102	14	116	23	43	24	16	15	20	26	.....	26	.....	.....
Mercer	26	2	28	4	22	.....	28	.....	7	1	.....	1	.....	.....
Miami	130	3	133	39	89	5	25	30	33	1	.....	1	.....	6
Monroe	34	3	37	5	26	3	20	10	.....	3	.....	3	.....	.....
Montgomery	109	10	119	.....	.....	.....	7	.....	90	26	.....	28	.....	7
Morgan	18	5	23	2	6	2	7	54	15	7	.....	7	.....	.....
Morrow	16	.....	16	5	6	.....	.....	.....	12	4	.....	4	.....	2

TABLE M—Continued.

Counties.	Prisoners under arrest during year ending June 30, 1887.			Charged with—			Sentenced to jail.	Average length of sentence— days.	Held for trial.	Insane.	Epileptic.	Total insane and epileptic.	Detained as witnesses.	Under 16 years of age.
	Males.	Females.	Total.	Felonies.	Misdemeanors.	Violation of ordinances.								
Muskingum	45	7	52	23	19	.....	.....	.....	20	6	1	7	.....	.....
Noble	28	2	30	10	7	8	.....	.....	24	4	1	5	.....	.....
Ottawa	19	1	20	10	5	5	.....	3	1	.....	.....	.....	.....	.....
Paulding	52	.....	52	6	10	.....	25	.....	10	.....	.....	.....	1	.....
Perry	4	.....	4	2	2	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pickaway	53	1	54	10	44	.....	22	30	33	4	.....	4	.....	4
Pike	35	10	45	14	.....	15	6	10	10	6	.....	6	.....	16
Portage	101	6	107	23	62	12	17	10	44	6	.....	6	4	.....
Preble	37	.....	37	12	15	10	12	18	3	1	.....	1	.....	.....
Putnam.....	23	2	25	.....	14	5	4	60	4	3	1	4	.....	1
Richland	60	21	81	36	12	15	.....	.....	5	18	.....	18	.....	2
Ross	63	3	66	37	21	.....	21	30	37	8	.....	8	.....	4
Sandusky	77	5	82	29	44	.....	6	40	5	9	.....	9	.....	3
Scioto.....	133	10	143	22	.....	.....	41	.....	.....	7	.....	7	.....	4
Seneca	41	.....	41	2	39	.....	4	20	34	1	.....	1	1	5
Shelby	42	2	44	18	22	.....	3	15	16	4	.....	4	.....	1
Stark	200	9	209	91	102	16	48	36	52	5	.....	5	.....	9
Summit	130	7	137	39	71	14	32	25	34	13	.....	13	.....	12
Trumbull.....	192	11	203	15	40	135	14	15	1	13	.....	13	.....	1

Tuscarawas.....	31	17	17	12	11	5	2	.....	2	.....	.....	.....
Union	25	7	.....	8	14	7	5	.....	5	.....	.....	.....
Van Wert.....	45	15	22	2	30	25	3	.....	3	.....	.....	.....
Vinton	33	17	19	10	7	31	.....	.....	.....	.....	.....	.....
Warren	46	10	36	22	12	23	.....	.....	.....	.....	.....	1
Washington.....	93	26	69	17	28	29	2	.....	2	.....	.....	1
Wayne.....	52	.....	.....	.....	.....	8	5	.....	6	.....	.....	6
Williams	34	2	20	22	9	14	2	.....	2	.....	.....	1
Wood	30	18	7	3	10	27	3	.....	3	.....	.....	1
Wyandot.....	63	18	23	25	15	30	5	.....	6	.....	.....	4
Totals.....	8,128	2,299	4,108	1,235	23	1,644	660	22	682	93	.....	231

TABLE M—Continued.

Counties.	Died.	Escaped.	Total cost of keeping prisoners for the year.	Prices allowed per day—cents.	Expended for repairs.	No. of prisoners in jail June 30, '87.	No. of insane in jail June 30, '87.	No. of epileptic in jail June 30, '87.	Names of County Sheriffs.
Adams	1	\$382 55	55	.....	4	1	.....	J. M. Long.
Allen.....	891 60	50	.....	.....	.....	.....	Moses P. Hoagland.
Ashland	2	230 50	50	.....	1	.....	.....	R. F. Andress.
Ashtabula	1,686 20	50	\$350 00	9	.....	.....	S. O. Latimer.
Athens	1	1	2,190 80	50	50 00	4	.....	.....	Fred. Stalder.
Auglaize	745 30	50	137 63	1	.....	.....	William Schulenberg.
Belmont	1,958 80	50	.....	9	.....	.....	Oliver Foulke.
Brown.....	465 70	92	.....	42	3	.....	S. J. Thompson.
Butler	2,730 10	70	.....	11	.....	.....	G. W. St. Clair.
Carroll	50	.....	3	.....	.....	John N. Davis.
Champaign	859 50	50	76 50	8	.....	.....	R. P. Wilkins.
Clarke.....	4,100 00	50	.....	17	.....	.....	Wm. B. Baker.
Clermont	352 00	50	3 25	2	.....	.....	Wm. B. Lloyd.
Clinton	459 70	35	.....	1	.....	.....	S. A. Holaday.
Columbiana.....	2,100 65	50	.....	11	.....	.....	John Harbaugh.
Coshocton	274 00	50	.....	1	.....	.....	J. B. Manner.
Crawford	1,191 65	50	15 00	5	.....	.....	Peter Fæth.
Cuyahoga.....	1	1	5,840 00	50	.....	32	2	.....	E. D. Sawyer.
.....	8	1,324 50	40	456 87	9	.....	.....	T. A. Lecklider.

Defiance.....	.....	623 42	45	10 00	3	.....	.....	Henry Wonderly.
Delaware.....	.....	246 00	50	.....	3	.....	.....	William J. Davis.
Erie.....	.....	769 00	50	.....	4	.....	.....	T. A. Huges.
Fairfield.....	.....	.....	.....	.....	5	1	.....	B. F. Price.
Fayette.....	.....	.....	.....	.....	2	.....	.....	A. B. Rankin.
Franklin.....	.....	1,495 40	50	62 30	24	.....	.....	Wm. H. Barbee.
Fulton.....	.....	3,829 50	50	.....	.....	5	.....	Daniel Dowling.
Gallia.....	.....	175 00	50	.....	.....	.....	.....	C. R. Small.
Geauga.....	.....	850 00	50	.....	1	.....	.....	Wm. Martin.
Greene.....	.....	454 75	50	25 00	2	.....	.....	C. W. Limehart.
Guernsey.....	.....	1,042 50	50	35 00	5	.....	.....	Hugh P. McDonald.
Hamilton.....	.....	1,020 50	50	.....	8	.....	.....	Leo Schott.
Hancock.....	.....	909 00	50	.....	74	2	.....	Geo. L. Cusac.
Hardin.....	.....	350 00	50	50 00	.....	.....	.....	Jno. S. Scott.
Harrison.....	.....	485 10	50	.....	1	.....	.....	J. C. Glover.
Henry.....	.....	320 00	50	.....	.....	.....	.....	E. T. Barnes.
Highland.....	.....	165 50	50	.....	1	.....	.....	A. C. Dawson.
Hocking.....	.....	1,152 00	50	600 00	2	.....	.....	Jno. Gallagher.
Holmes.....	.....	348 65	50	50 00	.....	.....	.....	Wm. S. Troyer.
Huron.....	.....	225 00	50	90 00	35	.....	.....	D. C. King.
Jackson.....	.....	178 10	50	.....	.....	.....	.....	J. M. Lively.
Jefferson.....	.....	1,291 51	45	20 00	4	2	1	Jno. G. Burns.
Knox.....	.....	1,795 25	50	.....	1	.....	.....	J. G. Stevenson.
Lake.....	.....	1,035 00	50	60 00	6	.....	.....	Jno. Austin.
Lawrence.....	.....	411 55	50	.....	.....	.....	.....	J. L. Fisher.
Licking.....	.....	1,847 90	40	.....	11	.....	.....	A. J. Crilly.
Logan.....	.....	2,515 50	50	.....	5	.....	.....	W. H. Lloyd.
Lorain.....	.....	1,496 90	50	471 00	1	.....	.....	M. A. Pounds.
Lucas.....	.....	325 00	50	.....	4	.....	.....	B. F. Wade.
Madison.....	.....	3,122 00	56	.....	112	3	.....	J. F. Vent.
Mahoning.....	.....	559 98	50	15 00	3	1	.....	Eli B. Walker.
Marion.....	.....	1,804 50	50	.....	5	.....	.....	F. C. Beckley.
Medina.....	.....	381 40	55	20 00	1	.....	.....	O. B. Dealing.
Meigs.....	.....	592 65	50	.....	2	.....	.....	Geo. Titus.
Mercer.....	.....	1,264 80	45	150 00	4	.....	.....	J. F. Timmond.
Miami.....	.....	506 60	50	250 00	.....	.....	.....	A. M. Heywood.
Monroe.....	.....	2,000 00	50	100 00	4	.....	.....	Louis Sulsberger.
Montgomery.....	.....	217 50	50	50 00	8	.....	.....	Wm. H. Snyder.
Morgan.....	.....	1,825 60	35	.....	22	3	1	J. R. Harper.
Morrow.....	.....	282 50	50	.....	34	.....	.....	B. Dawson.
	.....	145 45	50	30 00	.....	.....	.....

TABLE M—Concluded.

Counties.	Died.	Escaped.	Total cost of keeping prisoners for the year.	Prices allowed per day—cents.	Expended for repairs.	No. of prisoners in jail June 30, '87.	No. of insane in jail June 30, '87.	No. of epileptic in jail June 30, '87.	Names of County Sheriffs.
Muskingum.....	1	\$1,197 45	50	\$114 00	3	.....	.....	Russel Bethel.
Noble	399 91	65	67 50	1	.....	.....	H. J. Cleveland.
Ottawa	128 00	50	10 00	1	.....	.....	James Bizweter.
Paulding	668 25	50	.....	52	.....	.....	David W. Parr.
Perry....	50	.....	.....	.....	.....	P. M. Brunner.
Pickaway.....	50	.....	2	.....	.....	Wm. Schleyer.
Pike.....	851 80	50	.....	5	.....	.....	T. J. Jones.
Portage.....	450 00	50	.....	3	.....	.....	H. T. Sheldon.
Preble.....	721 40	50	.....	4	.....	.....	Daniel Peters.
Putnam	821 00	50	160 00	1	.....	.....	Peter Wannemacher.
Richland	360 65	50	25 00	11	1	.....	B. Flannery.
Ross	3	1,700 00	45	100 00	11	.....	.....	W. Scott Clark.
Sandusky.....	2,382 15	50	.....	11	.....	.....	R. W. Sandwisch.
Scioto	1,118 50	50	.....	5	.....	.....	Thos. T. Yeager.
Seneca ..	1	3	.....	45	.....	12	.....	.....	Geo. Homan.
Shelby ..	1	2	727 10	50	.....	6	.....	.....	T. M. Hussey.
Stark	475 50	50	75 00	6	.....	.....	Augustus Leminger.
Summit.....	3,978 60	50	90 60	14	.....	.....	W. D. Gamble.
Trumbull	1	1,748 80	50	.....	10	.....	.....	A. P. McKinley.
	1	1,049 09	50	262 30	1	.....	.....

Tuscarawas ..	.....	.....	394 50	50	.....	1	Geo. W. Bowers.
Union .....	.....	.....	276 00	50	.....	4	M. Hopkins.
Van Wert .....	.....	3	897 09	50	.....	5	Isaac R. Tudor.
Vinton .....	.....	.....	600 00	50	.....	1	C. F. Johnson.
Warren .....	.....	.....	677 90	50	.....	2	Lon. Hunter.
Washington .....	.....	.....	787 50	45	.....	4	I. R. Rose.
Wayne .....	.....	.....	915 50	50	.....	14	Jacob Mongey.
Williams .....	.....	.....	430 54	50	.....	.....	Geo. W. McGrew.
Wood .....	.....	.....	552 07	45	.....	5	Mellon F. Miles.
Wyandot .....	.....	.....	960 00	50	.....	4	H. J. Shumaker.
Totals	5	47	\$91,113 86		\$4,401 35	765	
						25	2

TABLE N.—GENERAL SUMMARY.

Names of Institutions.	Location.	Total number for the year.	Daily average on register.	Total current expenses for the year, including salaries.	Per capita cost reported for 1887, based on number actually in institution.	Per capita cost reported for 1887, based on number on institution register.
<i>State Benevolent Institutions.</i>						
Asylum for Insane	Athens	1,002	780	\$111,321 84	\$145 52	\$142 72
"	Cleveland	899	644	106,003 12	166 41	164 60
"	Columbus	1,188	979	152,288 30	176 46	155 55
"	Dayton	776	600	99,548 73	168 44	165 91
"	Carthage	962	752	110,315 07	146 69	146 69
"	Toledo	164	123	19,100 00	157 85	155 28
Institution for the Deaf and Dumb	Columbus	469	408	72,191 69	176 94	153 93
" " Blind	"	261	232	41,247 19	190 08	177 79
" " Feeble-Minded Youth	"	766	735	115,796 15	161 50	157 55
Soldiers' and Sailors' Orphans' Home	Xenia	782	674	101,452 41	.....	150 52
<i>Penal and Reformatory.</i>						
Ohio Penitentiary	Columbus	2,057	1,401	221,199 93	156 95	157 89
Boys' Industrial School	Lancaster	865	536	54,854 05	102 34	102 34
Girls' Industrial Home	Delaware	353	297	34,677 20	116 75	116 75
Work House	Cleveland	2,669	352	16,192 00	46 00	46 00
"	Cincinnati	3,772	590	65,132 18	110 39	110 39
House of Refuge	Cleveland	195	138	6,118 00	46 00	46 00
"	Cincinnati	599	300	43,548 82	145 16	145 16

<i>County Institutions.</i>					
Children's Homes .....	.....	2,815	1,961	192,324 77	74 46
County Infirmaries.....	.....	13,422	.....	674,294 75	70 83
County jails.....	.....	9,077	.....	91,113 86	10 04
Total.....	.....	.....	.....	\$2,328,720 06	.....
*Outdoor relief disbursed by Infirmaries, 82 counties reporting ...	.....	.....	.....	370,281 61	.....
Grand total .....	.....	.....	.....	\$2,699,001 67	.....

*Outdoor relief for 1886, 74 counties reporting, was \$286,714.32.

TABLE O.—SHOWING LOCATION, BUILDINGS AND

Location.	Officer in charge.	Material of lock-up.	Date of erection.	Cost of building.	Number of cells.
Aberdeen	R. H. Farley, V. M.	Frame and iron.....	.....	.....	1
Adamsville	Lyman Gaumer, V. M.	Wood.....	.....	.....	2
Anna	J. R. Yoong, V. M.	Wood.....	1879	\$100 00	1
Antwerp	Joel Dressor, V. M.	Brick and iron	1876	600 00	2
Arcadia	Jacob M. Weeks, V. M. ....	.....	1873	50 00	1
Arcanum.....	Wils Shafer, V. M.	Wood.....	1868	50 00	1
Archbald.....	John Daly, V. M.	Wood.....	1872	50 00	1
Ashland.....	J. M. Bryan, V. M.	Wood, iron and brick	1883	.....	4
Ashley	J. R. Campton, V. M.	Wood.....	1869	150 00	2
Avondale	Jos. A. Brown, V. M.	Stone.....	1880	.....	2
Beallsville.....	Citizen Darby, V. M.	Wood.....	1887	150 00	2
Beaver Dam.....	Samuel Cribley, V. M.	Wood.....	1877	100 00	2
Bedford	J. A. McElroy, V. M.	Wood, iron and brick ....	.....	.....	1
Bellaire	Will N. Darby, V. M.	Wood, iron and brick	1869	5,000 00	8
Belle Centre.....	W. G. Oliphant, V. M.	Wood and iron.....	.....	.....	2
Berea	L. E. Frost, V. M.	Brick and stone.....	1873	.....	3
Bloomingsburg	J. J. Pinkerton, V. M.	Wood.....	1880	.....	1
Bucyrus.....	C. F. Birk, C. M.	Wood and iron	1875	500 00	3
Caledonia	J. W. Bush, V. M.	Wood.....	1874	160 00	2
Camden.....	W. H. Overholtz, V. M.	Wood.....	1870	25 00	1
Canfield	Eli Rhodes, V. M.	Stone, wood and iron	1849	.....	8
Carey	Chas. Buckland, V. M.	Brick	1874	4,000 00	2
Carroll	Robt. Wiley, V. M.	Wood.....	1872	200 00	1
Cedarville.....	J. C. Grindle, V. M.	Iron	1886	.....	2
Celina.....	G. H. Houser, V. M.	Iron	1875	150 00	2
Centerburg	Hyatt Messmore, V. M.	Wood.....	.....	.....	2
Chardon	G. D. Colby, V. M.	Stone and brick	1868	13,000 00	4
Chillicothe.....	Dennis Rigney, C. P.	Iron	1876	1,000 00	8
Clarington	Hamp Dillon, V. M.	Brick and stone.....	1878	3,000 00	2
Cleveland	J. W. Schmitt, C. P.	Stone and iron	1861	50,000 00	50
Clifton	Peter McEvilly, V. M.	Brick and iron.....	1881	600 00	3
Clyde	John C. Letson, V. M.	Wood and iron.....	1875	.....	4
Columbus Grove..	Jesse Furchy, V. M.	Wood and iron.....	1870	250 00	3
Conway	J. L. McClure, V. M. ....	.....	1872	.....	2
Covington.....	William Gavin, V. M.	Brick	1873	.....	2
Crown City.....	Jno. P. Wooten, V. M.	Wood.....	1873	50 00	1
Dalton	Frank Kosin, V. M.	Wood.....	1870	100 00	1
Darbyville	G. W. Brooks, V. M.	Wood and brick.....	1880	1,300 00	3
Defiance.....	Wm. Sharpe, V. M.	Stone and brick.....	.....	.....	11
Delta	N. E. Bolles, V. M.	Brick	1879	3,900 00	6
Dexter City	P. H. Mugrage, V. M.	Wood.....	1885	50 00	1
Dublin	Joseph S. Davis, V. M.	Wood.....	1883	100 00	2
East Liverpool	Charles Gill, C. M.	Brick and stone.....	1877	.....	3
Eaton	Court Corwin, V. M.	Wood.....	1870	.....	6
Elyria	N. A. Redmond, V. M.	Stone and brick	1878	.....	2
Fayette	S. A. Shane, V. M.	Wood	1875	100 00	2
Fayetteville.....	Thomas E. Crone, V. M.	Wood.....	1869	100 00	2
Felicity	Fred Leach, V. M.	Wood.....	1858	160 00	2
Findlay	John W. Bly, V. M.	Wood.....	1857	50 00	7
Fletcher.....	W. D. Kiser, V. M.	Wood.....	1869	90 00	1
Fremont	H. Hunsinger, C. M.	Stone and iron.....	1877	.....	4
Gahanna	John Craig, V. M.	Wood.....	1882	125 00	2
Galion	W. H. W. Nichols, C. M.	Iron	1879	800 00	4
Garrettsville	W. C. Stockwell, V. M.	Wood.....	1868	150 00	2
Germantown.....	William Shaeffer, V. M.	Brick	1874	500 00	2
Gettysburg	W. A. Seymore, V. M.	Wood.....	1880	.....	2
Gibsonburgh	P. P. Woolcott, V. M.	Wood.....	1879	80 00	1
Gilboa.....	J. S. Conkright, V. M.	Wood.....	1881	235 00	2
Glendale	Andrew Meagher, V. M.	Brick	1871	6,000 00	2
Granville.....	Abner Evans, V. M.	Wood.....	1857	1,000 00	.....

ACCOMMODATIONS OF STATION HOUSES AND LOCK-UPS.

Size of cells.	Size of outer room.	Capacity of lock-up.	Largest number of inmates at one time.	Sleeping accommodations.	Bedding furnished.
8 × 10	14 × 16	4	1	Wood bedsteads.....	Blankets and mattresses.
3 × 11	8 × 10	7	1	Wooden bunk.....	Beds.
12 × 14	.....	7	10	Floor.....	Blankets.
7 × 7	6 × 16	8	3	Floor.....	Blankets.
10 × 10	10 × 10	4	6	Bunks.....	Straw beds and blankets.
4 × 8	3 × 8	2	9	Bunk.....	Blanket.
12 × 12	6 × 12	2	2	Bunks.....	Straw bed, blankets and quilts.
4½ × 8	18 × 16	4	4	Bunks.....	Straw beds and blankets.
4½ × 8	7 × 9	6	2	Bunks.....	Quilts.
8 × 10	18 × 20	4	6	Bunks.....	Blankets and quilts.
6 × 7	11 × 15	4	2	Floor.....	Quilts.
8 × 12	.....	2	.....	.....	Straw beds, blankets and quilts.
9 × 17	.....	5	1	Bunks.....	Husk mattress and blankets.
5 × 8	26 × 32	16	9	Bunks.....	Blankets.
5 × 7	9 × 20	2	3	Floor.....	Quilts.
4½ × 7	8½ × 15	6	4	Bunks.....	Matress and blankets.
10 × 12	.....	4	1	.....	Straw bed.
4 × 8	12 × 20	6	28	Bunks.....	.....
4 × 9	5 × 9	3	4	Bunks.....	Straw mattress and quilts.
7½ × 5½	25 × 15	2	3	Bunks.....	Straw mattress and blankets.
8 × 8	9 × 24	16	2	Floor.....	Quilts.
4 × 8	12 × 40	4	20	Bunks.....	Blankets.
8 × 10	10 × 12	2	9	Bunks.....	Straw beds and quilts.
5 × 7	18 × 22	4	2	Bunks.....	Straw bed and quilts.
6 × 8	12 × 16	4	4	Bunks.....	Blankets.
8 × 8	4 × 16	5	.....	Bunks.....	Blankets.
5 × 10	8 × 24	12	3	Iron bedsteads.....	Straw mattresses, blankets and quilts.
4 × 8	27 × 27	14	10	Bunks.....	.....
8 × 10	6 × 24	4	2	Bunks.....	Blankets.
6 × 8	.....	60	30	Bunks.....	.....
10 × 12	22 × 16	6	6	Bedsteads.....	.....
5 × 6	10 × 20	16	15	Floor.....	Quilts.
10 × 12	10 × 12	25	2	Bunks.....	Husk mattresses and blankets.
6 × 10	.....	2	4	Bunks.....	.....
5 × 11	22 × 50	4	3	Benches.....	Blankets.
10 × 12	.....	2	2	Floor.....	.....
12 × 14	.....	2	.....	Bunks.....	Blankets.
10 × 12	14 ×	9	4	Bunks.....	Straw beds, blankets and quilts.
4 × 6½	9 × 28	11	10	Bedsteads.....	Straw beds and blankets.
8 × 10	8 × 30	7	7	Bunks.....	Blankets.
10 × 10	.....	2	.....	Bunks.....	.....
5 × 7	7 × 10	6	1	Floor.....	Straw beds and blankets.
6 × 11	.....	6	9	Bunks.....	Quilts.
6 × 7	12 × 14	6	9	Bunks.....	Blankets and quilts.
14½ × 21	5 × 26	11	26	Benches.....	Blankets.
.....	.....	2	1	Bedsteads.....	Blankets.
6 × 8	.....	2	4	Bench.....	.....
8 × 12	.....	6	1	Bunks.....	Straw beds.
5 × 8	24 × 24	14	22	Bunks.....	Blankets.
8 × 10	.....	.....	.....	Floor.....	.....
7 × 7	6 × 29½	8	21	Bunks.....	Straw mattress.
6 × 6	6 × 10	3	4	Bench.....	.....
4 × 7	54 × 22	8	25	Bunks.....	.....
6 × 8	8 × 12	8	2	Bunks.....	Straw beds and blankets.
6 × 8	18 × 20	15	2	Bunks.....	Straw beds and blankets.
6 × 8	4 × 10	4	3	Bunks.....	Straw beds and blankets.
6 × 12	6 × 2	2	4	Bunks.....	Straw beds and blankets.
8 × 8	8 × 16	4	2	Bunks.....	Straw beds, blankets and quilts.
4 × 8	15 × 18	2	2	Bunks.....	Blankets and quilts.
.....	12 × 15	6	5	Bunks.....	Straw beds, blankets and quilts..

TABLE O—Continued.

Location.	Officer in charge.	Material of lock-up.	Date of erection.	Cost of building.	Number of cells.
Greenville	Henry Miley, C. M	Brick	1875	\$300 00	3
Harmar	S. G. Stage, V. M	Stone and brick	1880	.....	2
Harrison	Francis Hollonell, V. M	Brick	1877	.....	2
Harrisburg	Nathan Harvey, V. M	Wood	1878	60 00	1
Haskins	M. S. Greeves, V. M	Wood	1875	200 00	2
Hebron	James Balthis, V. M	Wood	1867	100 00	1
Hillsboro	G. W. Rhoades, V. M	Brick	1875	.....	2
Jamestown	G. G. Ballard, V. M	Brick	1881	.....	2
Kalida	William Spencer, V. M	Wood .....	.....	140 00	1
Kingstown	James A. Stewart, V. M	Wood	1870	.....	2
Lancaster	Charles F. Justus, V. M	Brick and wood	1859	.....	3
Leesburg	F. Dooley, V. M	Iron	1875	150 00	1
Leesburgh	C. C. Tucker, V. M	Wood	1880	75 00	2
Logan	George Deishley, V. M	Brick	1885	1,000 00	4
Loudonville	A. D. Webster, V. M	Wood and iron	1874	.....	3
Lorain	H. R. Osgood, V. M	Stone	1877	300 00	4
Loveland	Robt. T. Martin, V. M	Iron	1878	360 00	2
Madison	Chas. Gilbreath, V. M	Wood and brick	1868	130 00	2
Madisonville	George P. Deem, V. M	Wood	1887	950 00	2
Malvern	N. D. Weaver, V. M	Wood	1879	237 50	2
Martinsville	H. T. Muselman, V. M	Wood	1876	200 00	2
Marysville	M. Coolrick, V. M	Stone and iron	1887	.....	3
Mason	John A. Corrlington, V. M	Wood	1873	200 00	1
Massillon	Adam Wendling, C. M	Brick and wood	1869	4,000 00	4
Maumee	Phil. Hartman, C. M	Iron and brick	1868	850 00	2
Middleport	Charley Hobbs, V. M	Brick .....	.....	.....	4
Middletown	R. C. Hendrickson, V. M	Brick and stone	1880	.....	2
Millburg	C. A. Martin, V. M	Wood	1875	75 00	2
Millersburgh	J. E. Albertson, V. M	Wood and iron	1877	127 00	2
Minster	W. Tangemann, V. M	Brick	1870	.....	2
Mt. Gilead	E. C. Sanford, V. M	Stone and iron .....	.....	.....	.....
Mt Sterling	Simon Rischelderfer, V. M	Brick	1883	.....	2
Navarre	C. Stahl, V. M	Wood	1878	250 00	2
New Athens	Thos. A. Wilson, V. M	Wood	1870	400 00	1
New Bloomington	A. J. Mil'ison, V. M	Wood	1874	180 00	1
Newcomerstown	L. Gardner, V. M	Iron	1874	400 00	3
New Lebanon	W. D. Willis, V. M	Wood	1881	155 00	2
New Paris	J. T. Cox, V. M	Wood and iron	1881	725 00	3
New Straitsville	Leonard Harbaugh, V. M	Brick	1884	4,000 00	4
New Vienna	Uriah Moon, V. M	Brick	1882	75 00	1
North Amherst	J. H. Claus, V. M	Stone	1884	.....	4
North Lewisburg	J. K. Hawkins, V. M	Brick and wood	1870	.....	2
Norwalk	Leroy Burton, V. M	Brick and wood	1876	.....	4
Oberlin	I. L. Newton, V. M	Stone and brick .....	.....	.....	2
Orrville	J. L. Hall, V. M	Brick	1882	.....	2
Osborn	M. R. Brannum, V. M	Brick	1872	950 00	1
Osnaburgh	Robert Arnbuster, V. M	Wood	1881	100 00	2
Ostrand	J. R. Crain, V. M	Wood	1879	200 00	2
Painsville	A. D. Crowfoot, V. M	Brick	1875	.....	4
Perrysburg	Lewis Fink, V. M	Stone and brick	1847	.....	6
Port Jefferson	John A. Hense, V. M	Wood	1866	70 00	1
Portsmouth	John W. Lewis, C. P	Brick	1874	1,500 00	8
Port Washington	Joseph Hitchens, V. M	Brick	1887	200 00	2
Prospect	J. S. Kline, V. M	Brick	1873	200 00	2
Put-in Bay	Adam Heide, V. M	Stone and brick	1887	9,000 00	.....
Richmond	E. C. Marshal, V. M	Wood	1884	307 00	1
Ripley	G. H. Smi'son, V. M	Iron .....	.....	.....	2
Rocky Ridge	Thomas H. Boger, V. M	Wood	1882	350 00	4
Roseville	Joseph Forgrave, V. M	Brick	1883	3,000 00	2
Russellville	John Singer, V. M .....	.....	.....	.....	2
Sarahsville	J. H. Camden, V. M	Wood	1882	75 00	2
Senecaville	L. B. Young, V. M .....	.....	.....	.....	.....
Seville	W. N. Clapper, V. M	Brick and iron	1882	478 98	2
Shane's Crossing	Jonathan Billman, V. M	Wood	1868	120 00	1
Shelby	S. C. Gates, V. M	Wood	1865	100 00	3
South Bloomfield	John N. Jones, V. M	Stone and brick	1884	918 00	3

TABLE O—Continued.

Size of cella.	Size of outer room.	Capacity of lock-up.	Largest number of inmates at one time.	Sleeping accommodations.	Bedding furnished.
3 × 8	14 × 26	16	27	Benches	
4 × 8	22 × 30	3	3	Bunks	Husk mattresses, blankets and quilts.
8 × 8	16 × 20	4	2	Cots	Matresses, blankets and quilts.
10 × 18	30 × 50	6	1	Bunks	Blankets and quilts.
8 × 10	12 × 14	.....	.....	Bunks	Straw bed and blanket.
10 × 10	.....	6	1	Floor	Straw and blankets.
6 × 8	16 × 18	4	8	Bunks	Blankets.
4 × 6	14 × 20	4	4	Benches	
.....	10 × 14	6	2	Bunks	Quilts.
6 × 10	.....	4	5	Floor	
4 × 6	3 × 16	15	20	Floor	
6 × 10	12 × 14	2	2	Bunks	Blankets and quilts.
6 × 8	.....	4	.....	Bunks	Blankets.
5 × 7	20 × 20	4	6	Bedsteads	Straw beds and quilts.
6 × 8	6 × 24	6	6	Bunks	Quilts.
5 × 8	7 × 12	4	10	Bedsteads	Straw beds, blankets and quilts.
7 × 10	16 × 24	4	4	Bunks	
6 × 7	7 × 12	.....	12	Bunks	Blankets.
5 × 7	14 × 17	2	1	Bunks	
7 × 9	6 × 6	6	.....	Benches	
6 × 6	6 × 11	2	4	Bunks	Matresses and blankets.
5 × 7½	12 × 20	15	8	Bedsteads	Straw beds and blankets.
5 × 7	7 × 12	9	6	Floor	Blanket.
4½ × 7	22 × 30	8	13	Bunks and benches	Husk mattresses, blankets and quilts.
8 × 12	30 × 24	8	6	Bunks	Straw beds, blankets and quilts.
7 × 5	6 × 30	8	7	Bedsteads	Matresses and blankets.
3½ × 8	17 × 22	2	.....	Bunks	Blankets.
6 × 7	9 × 15	3	3	Floor	
8 × 10	18 × 22	2	13	Bunks	Straw beds, blankets and quilts.
9 × 12	9 × 12	4	4	Bunks	Straw beds and blankets.
.....	18 × 24	5	3	Bedsteads	Straw beds and quilts.
5 × 7	10 × 14	2	5	Bedstead	Straw bed and quilts.
6 × 13	12 × 7	8	8	Bunks	Straw beds and blankets.
14 × 14	14 × 14	2	.....	Bunks	
10 × 12	12 × 16	3	2	Bedsteads	Straw beds, blankets and quilts.
4 × 9	6 × 15	6	6	Bedsteads	Straw beds and quilts.
4½ × 7½	6½ × 9½	2	2	Bunks	Straw beds, blankets and quilts.
7 × 7	13 × 24	6	6	Bedsteads	Straw beds and blankets.
6 × 8	16 × 16	4	8	Bedsteads	
5 × 7	10 × 12	5	2	Bunk and floor	Blankets.
7 × 9	8 × 30	5	5	Bunks	Husk mattresses and blankets.
8 × 10	18 × 18	4	3	Bedsteads	Straw beds, blankets and quilts.
4½ × 7	12 × 48	7	5	Bunks	Blankets.
9 × 10	8 × 16	6	3	Benches	Straw beds and blankets.
15 × 25	.....	20	3	Bunks	Blankets.
10 × 10	30 × 40	4	2	Bench	Blankets.
6 × 10	5 × 14	6	10	Bedsteads	Blankets.
7 × 10	12 × 14	7	7	Bedsteads	Straw beds, blankets and quilts.
4½ × 8	7 × 15	10	4	Floor	
4 × 9	8 × 28½	9	6	Bunks	Straw beds and blankets.
10 × 12	.....	2	2	Straw and floor	
4½ × 6	36 × 18	30	34	Bunks	Matresses, blankets and quilts.
4 × 8	6 × 21	2	1	Floor	Blankets.
5 × 9	5 × 10	2	6	Floor	Blankets.
.....
6 × 8	18 × 20	.....	.....	.....	.....
6 × 8	16 × 16	6	7	Floor	
6 × 8	6 × 16	4	1	Bunks	Straw beds and blankets.
8 × 10	15 × 18	10	1	Floor	
.....	.....	.....	.....	.....	Matresses.
6 × 10	6 × 10	.....	1	Bunks	Blankets and quilts.
.....
5¼ × 7½	7 × 10½	4	2	Bunks	
10 × 12	.....	2	3	Bedsteads	Straw beds, blankets and quilts.
8 × 7	18 × 5	4	11	Floor	
3½ × 7	18 × 16	8	2	Cots	Blankets.

TABLE O— Concluded.

Location.	Officer in charge.	Material of lock-up.	Date of erection.	Cost of building.	Number of cells.
Springboro	O. E. Montgomery, V. M.....	Iron	1878	\$358 75	2
Stockport.....	C. Justice	Wood.....	1874	40 00	2
St. Paris	G. W. Flowers, V. M	Brick and iron	1885	1,000 00	6
Tippecanoe	Thos. Hentley, V. M.....	Brick and iron.....	1874	.....	3
Toledo	E. O. Dwyer, C. P.....	Brick, stone and iron	1871	90,000 00	36
Tontogany	John C. Wickham, V. M.....	Wood.....	1879	250 00	2
Troy	Geo. Irwin, V. M.....	Brick and iron	1876	.....	2
Unionville Centre..	Wesley Goldsberry, V. M.....	Wood.....	1879	75 00	1
Versailles	S. H. English, V. M	Iron	1879	100 00	1
Wapakoneta	N. Shubert, V. M.....	Iron	1885	175 00	2
Waynesville.....	Geo. H. Dakin, V. M	Brick and stone.....	1887	700 00	1
West Alexandria...	D. A. Potterf, V. M.....	Stone	1876	600 00	2
Westerville.....	P. A. Conklin, V. M	Brick .....	.....	.....	4
West Salem.....	John Gudergahn, V. M..	Wood.....	1879	400 00	2
West Union	O. C. Robuck, V. M.....	Stone.....	.....	.....	3
West Unity.....	John Hamilton, V. M	Wood.....	1874	150 00	2
Willshire	Israel Rempp, V. M.....	Wood.....	1874	30 00	2
Wilmington.....	Z. G. A. Hawerth, Mayor..	Brick and iron	1883	2,014 25	3
Worthington	M. S. Hiser, V. M	Brick	1880	775 00	5
Yellow Springs....	Chas. Hamilton, V. M.....	Brick and iron	1872	2,200 00	2
Youngstown	W. A. Williams, V. M.....	Brick and iron	1868	7,000 00	4
Zanesfield	F. C. Wade, V. M	Wood.....	1884	405 00	2
Zanesville.....	Hugh Fineral, Supt. Work House..	Brick and iron	1884	20,000 00	62

TABLE O—Concluded.

Size of cells.	Size of outer room.	Capacity of lock-up.	Largest number of inmates at one time.	Sleeping accommodations.	Bedding furnished.
5 × 6	15½ × 18	2	1	Bunks	Straw beds, blankets and quilt.
4 × 8	.....	4	2	Bunk	Straw bed and blanket.
3½ × 7½	6 × 12	8	3	Bunks	Quilts.
3½ × 7½	18 × 18	3	5	Bunks	Matresses and blankets.
4 × 6	15 × 18	.....	50	Bunks	Husk matresses and blankets.
7 × 8	15 × 15	2	5	Bunk	Straw bed and blanket.
8 × 8	8 × 15	8	8	Floor	
8 × 8	6 × 8	2	1	Floor	Matresses and blankets.
6 × 8	15 × 15	2	2	Bunks	Blankets.
5 × 7	14 × 18	4	6	Bedsteads	Straw beds and blankets.
6 × 7	12 × 18	10	5	Bedsteads	Blankets.
3½ × 6	13 × 13	4	5	Benches	
.....	.....	.....	.....	Bunks	
7 × 14	6 × 14	8	6	Bunks	
6 × 10	.....	15	5	Bedsteads	Matresses, blankets and quilts.
5 × 6	5 × 6	2	1	Bunks	Straw bed, blanket and quilt.
7 × 14	7 × 14	4	3	Bunks	Straw beds and quilts.
6 × 5	18 × 18	6	8	Bunks	Blankets.
3 × 6½	12 × 16	10	3	Bunks	
6 × 8	14 × 12	4	4	Bunks	Blankets.
12 × 14	20 × 18	15	20	Bedsteads	
9 × 9	9 × 18	2	2	Bedsteads	Straw beds.
4½ × 7	48 × 33	62	25	Bunks	

TABLE P.—SHOWING NUMBERS AND CLASSES OF PRISONERS ARRESTED AND IMPRISONED

[illegible]

IN CITY STATION HOUSES AND VILLAGE LOCK-UPS FOR THE YEAR ENDING JULY 15, 1887.

Tramps or vagrants lodged—not held as prisoners.			County prisoners in lock-up.			Total.			Number present on July 15, 1887.			Of total number under 16 years of age.		
Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
3		3	1		1	11		11						
90	1	91				95	1	96						
15		15	1		1	62	2	64						
10		10				10		10						
200		200	8		8	220	2	222					1	1
30		30				31		31						
51	1	52				2		2						
						60	1	61						
10		10				14		14						
49		49				50		50						
140		140				143		143						
275	2	277	19	1	20	617	12	629				14		14
5		5	1		1	27		27				2		2
7	1	8				18	1	19						
5		5				7		7						
720	7	727				833	12	845						
25		25				40		40						
20	2	22				47	2	49						
3		3				7		7						
160		160				192	3	195	1		1			
70	5	75				71	5	76						
50		50				58	3	61					2	2
						61		61						
1		1	5		5	15		15						
650		650				864	20	884				10		10
11		11	1		1	21		21						
10		10				12		12						
287		287	37		37	401		401						
15		15				25		25						
3		3				30	1	31						
						42	3	45	2		2			
6		6	2		2	36		36						
60		60				67		67						
10		10				10		10						
						3		3						
45		45	38		38	223	1	224				2		2
138		138				223	4	227						
785	17	802	90		90	975	17	992				10		10
1		1				3		3						
						5		5						
						2	1	3						
			19		19	249	37	286						
502		502				703	12	715				12		12
9	1	10				13	1	14						
			15		15	361	3	364				9		9
25		25				55		55						
125		125	4		4	145		145						
12		12				15		15						
12		12				13		13	3		3			
1		1				20		20				1		1
444		444	6	8	14	506	10	516				1	2	3
556		556				751	9	763	8	1	9	10		10
1	1	2				15	1	16						
15		15	8		8	53		53						
1		1				1		1						
12		12				12		12						

TABLE P—Continued.

	Number of insane in lock-up during the year.			City or village prisoners, arrested and held for examination.			City or village prisoners serving sentence.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
Hebron.....				1		1			
Hillsboro.....	3	1	4	145	5	150			
Jamestown.....				31	1	32			
Kalida.....									
Kingstown.....							3		3
Lancaster.....				353	20	373			
Leesburg.....				1		1			
Leesburgh.....				2		2			
Logan.....	2		2	72	20	92			
Loudonville.....	1		1	74	3	77			
Lorain.....				10		10			
Loveland.....				20		20			
Madison.....				3		3			
Madisonville.....				1		1			
Malvern.....									
Martinsville.....				7		7			
Marysville.....				71		71			
Mason.....				8		8			
Massillon.....	3		3	187	25	212	22	5	27
Maumee.....	1		1	63	3	66	3		3
Middleport.....				52	6	58	3		3
Middletown.....									
Millbury.....	1		2	1		1			
Millersburgh.....				137		137	6		6
Minster.....				18		18	2		2
Mt. Gilead.....				17		17			
Mt. Sterling.....	1		1	12		12	2		2
Navarre.....				6		6			
New Athens.....									
New Bloomington.....				6		6			
Newcomerstown.....				26		26			
New Lebanon.....				2		2			
New Paris.....				8		8	3		3
New Straitsville.....									
New Vienna.....									
North Amherst.....									
North Lewisburg.....				38	1	39			
Norwalk.....	3		3						
Oberlin.....	1		1	20		20	8		8
Orrville.....				20		20	2		2
Osborn.....				13		13			
Osnaburgh.....									
Ostrander.....				2		2			
Painesville.....				50	1	51	5		5
Perrysburg.....	1		1	32		32	11		11
Port Jefferson.....									
Portsmouth.....	2	1	3	289	14	303			
Port Washington.....									
Prospect.....				46	4	50	10		10
Put-in-Bay.....									
Richmond.....									
Ripley.....				75	11	86	20		20
Rocky Ridge.....				2		2			
Roseville.....				4		4			
Russellville.....	1		1						
Sarahsville.....		2	2						
Senecaville.....									
Seville.....				5		5			
Shane's Crossing.....				5		5			
Shelby.....	1		1	25		25			
South Bloomfield.....				3		3	1		1
Springboro.....									
Stockport.....									
St. Paris.....				25	1	26			
Tippecanoe.....				3		3			
Toledo.....	5	2	7						

TABLE P—Continued.

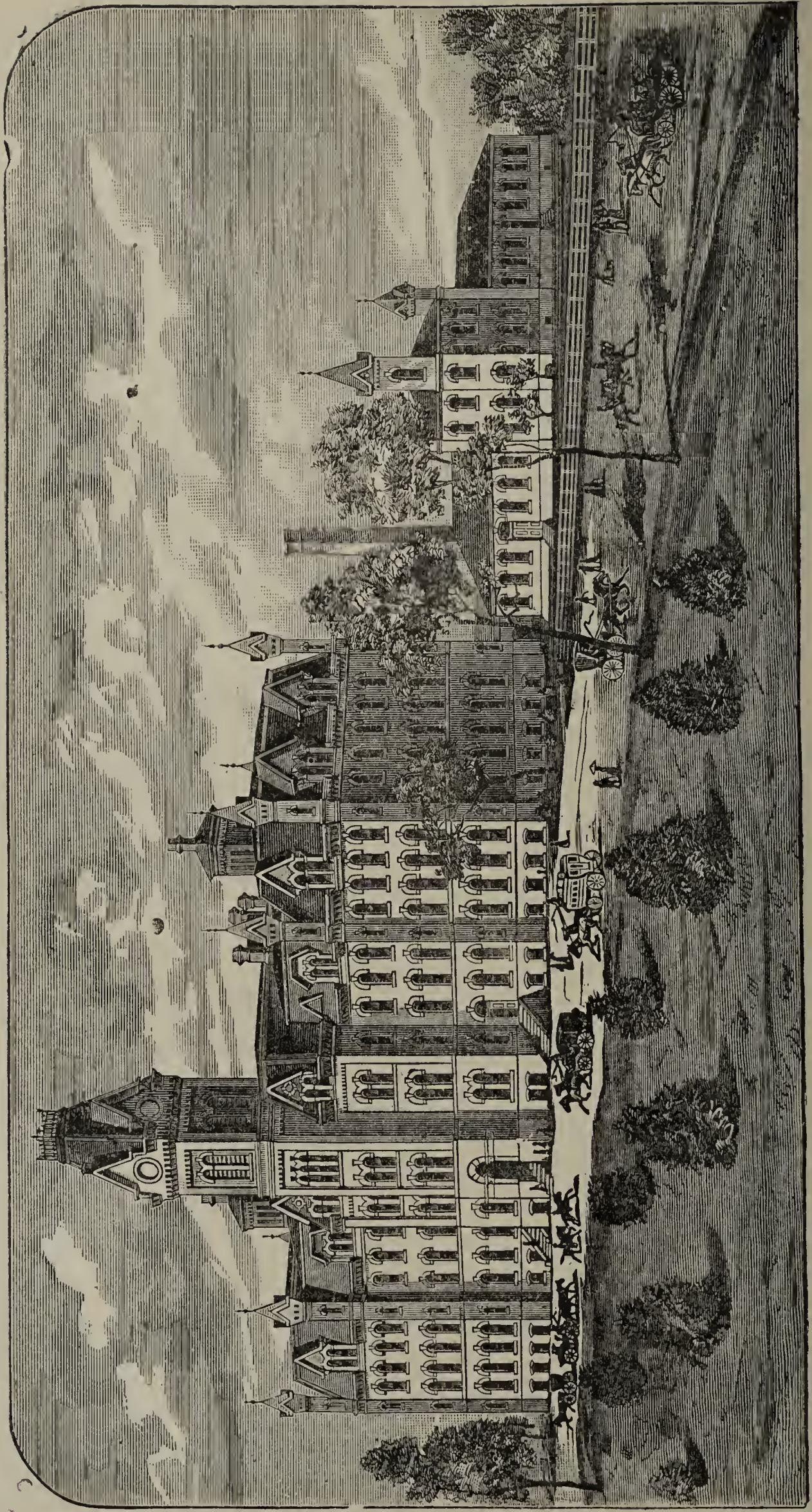
Tramps or vagrants lodged—not held as prisoners.			County prisoners in lock-up.			Total.			Number present on July 15, 1887.			Of total number under 16 years of age.		
Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
10		10				11		11						
15	2	17	17		17	180	8	188						
25		25	4		4	60	1	61				2		2
97	1	98				100	1	101						
61		61				353	20	373						
						62		62						
4		4				2		2						
290	7	297	7		7	78	20	98				1		1
100		100				372	10	382				1		1
30		30	2		2	110		110						
50		50				52		52						
						53		53						
						1		1						
20		20				27		27						
110		110				181		181						
35	1	36				43	1	44						
40		40	58	7	65	310	37	347	3	2	5	17		17
43		43	2		2	112	3	115				2		2
9	4	13				64	10	74						
50		50				52		52				1		1
						143		143						
130		130				150		150						
23	2	25				40	2	42						
23		23	1		1	39		39						
225	1	226	4		4	235	1	236						
10		10				19		19						
261		261				287		287				4		4
8	1	9				10	1	11						
59	1	60	2		2	72	1	73						
50	2	52	1	1	2	51	3	54						
67		67				67		67						
30		30	15		15	83	1	84				1		1
300		300	8		8	311		311						
263	1	264				292	1	293	1		1	1		1
150		150				172		172				1		1
			5		5	18		18						
24		24				26		26						
400		400				455	1	456						
140	2	142				184	2	186				3		3
71	19	90				362	34	396	140	15	155	12		12
100		100				156	4	160	1		1			
5		5	20		20	120	11	131	9		9	2	4	6
31		31				33		33						
						4		4						
						1		1						
						2		2						
78		78	2		2	85		85						
25		25				30		30						
172		172	6		6	204		204						
4		4				8		8						
1		1				1		1						
7		7				7		7				1		1
240		240	7		7	25	1	26						
						250		250						
						5	2	7						

TABLE P—Concluded.

	Number of insane in lock-up during the year.			City or village prisoners, arrested and held for examination.			City or village prisoners serving sentence.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
Tontogany				4		4			
Troy									
Unionville Centre									
Versailles				14		14			
Wapakoneta	1		1	67	5	72	3		3
Waynesville				3		3			
West Alexandria				15		15	1		1
Westerville									
West Salem	2		2	12		12			
West Union	2		2	3		3	1		1
West Unity				1		1			
Willshire									
Wilmington				3		3	30	5	35
Worthington				10		10			
Yellow Springs	4	2	6	100	10	110			
Youngstown	6	1	7	200	100	300	25		25
Zanesfield				3		3			
Zanesville							196	14	210
Totals	76	10	86	4,801	349	5,150	475	27	502

TABLE P—Concluded.

Tramps or vagrants lodged—not held as prisoners.			County prisoners in lock-up.			Total.			Number present on July 15, 1887.			Of total number under 16 years of age.		
Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
38	38	.....	.....	.....	42	.....	42	.....	.....	.....	4	.....	4
5	5	.....	.....	.....	5	.....	5	.....	.....	.....	.....	.....	.....
100	100	.....	.....	.....	114	.....	114	.....	.....	.....	2	.....	2
60	60	1	.....	1	132	5	137	.....	.....	.....	.....	.....	.....
50	50	.....	.....	.....	53	.....	53	.....	.....	.....	.....	.....	.....
50	50	.....	.....	.....	66	.....	66	.....	.....	.....	.....	.....	.....
25	25	.....	.....	.....	25	.....	25	.....	.....	.....	.....	.....	.....
40	40	.....	.....	.....	54	.....	54	.....	.....	.....	.....	.....	.....
12	12	.....	.....	.....	18	.....	18	1	.....	1	.....	.....	.....
.....	1	.....	1	.....	.....	.....	.....	.....	.....
24	1	25	.....	.....	.....	57	6	63	7	1	8	.....	.....	.....
25	2	27	.....	.....	.....	35	2	37	.....	.....	.....	1	.....	1
200	200	.....	.....	.....	304	12	316	.....	.....	.....	8	.....	8
.....	231	101	332	.....	.....	.....	.....	.....	.....
.....	3	.....	3	.....	.....	.....	.....	.....	.....
.....	32	.....	32	228	14	242	21	1	22	.....	.....	.....
10,190	85	10,275	449	17	466	15,991	488	16,479	197	20	217	134	10	144



OHIO STATE UNIVERSITY.

SEVENTEENTH ANNUAL REPORT

OF THE

BOARD OF TRUSTEES

OF THE

OHIO STATE UNIVERSITY,

TO THE

GOVERNOR OF THE STATE OF OHIO,

FOR THE YEAR 1887.

COLUMBUS :

THE WESTBOTE COMPANY, STATE PRINTERS.

1888.

BOARD OF TRUSTEES.

LUCIUS B. WING.....Newark.
THOMAS J. GODFREYCelina.
THOMAS A. COWGILL.....Kennard.
PETER H. CLARK.....Cincinnati.
HENRY J. BOOTH.....Columbus.
HENRY B. PERKINSWarren.
RUTHERFORD B. HAYES.....Fremont.

OFFICERS OF THE BOARD:

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THOMAS A. COWGILL.....*Vice-President.*
ALEXIS COPE.....*Secretary.*
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OHIO STATE UNIVERSITY.

1887-1888.

FACULTY.

WILLIAM H. SCOTT, A. M., LL. D.,
President and Professor of Philosophy.—University Grounds.

EDWARD ORTON, PH. D., LL. D.,
Professor of Geology.—104 Twentieth Street.

SIDNEY A. NORTON, PH. D., LL. D.,
Professor of General and Applied Chemistry.—Corner Town and Seventh Streets.

NORTON S. TOWNSHEND, M. D.,
Professor of Agriculture and Veterinary Science.—University Grounds.

ALBERT H. TUTTLE, M. Sc.,
Professor of Zoology and Comparative Anatomy.—University Grounds.

STILLMAN W. ROBINSON, C. E.,
Professor of Mechanical Engineering.—1205 North High Street.

NATHANIEL W. LORD, E. M.,
Professor of Mining and Metallurgy.—Room 16, Hayden Block, E. Broad Street.

SAMUEL C. DERBY, A. M.,
Librarian, and Professor of the Latin Language.—Indianola Place.

WILLIAM R. LAZENBY, AG. B.,
Professor of Horticulture and Botany.—University Grounds.

JOSIAH R. SMITH, A. M.,
Secretary, and Professor of the Greek Language.—Indianola Place.

HENRY A. WEBER, PH. D.,
Professor of Agricultural Chemistry.—University Grounds.

BENJAMIN F. THOMAS, PH. D.,
Professor of Physics.—University Grounds.

GEORGE W. KNIGHT, A. M., PH. D.,
Professor of History and Political Science.—University Grounds.

R. D. BOHANNAN, B. Sc., C. E., E. M.,
Professor of Mathematics and Astronomy.

CHAS. E. KILBOURNE,
First Lieutenant 2d Artillery, U. S. A., Professor of Military Science and Tactics, and Assistant
Professor of Mathematics.—E. Town Street.

H. J. DETMERS, V. S.,
Professor of Veterinary Surgery.

C. NEWTON BROWN,
Associate Professor of Civil Engineering.

ALICE K. WILLIAMS,
Associate Professor of the French Language.—Woodruff Avenue.

ERNST A. EGGERS,
Associate Professor of the German Language.

ALFRED H. WELCH, A. M.,
Associate Professor of the English Language and Literature.

COLUMBUS, OHIO, *November 15, 1887.*

To His Excellency, GOVERNOR JOSEPH B. FORAKER:

SIR: I have the honor to transmit herewith the seventeenth annual report of the board of trustees of the Ohio State University.

Very respectfully,

Your obedient servant,

ALEXIS COPE,

Secretary of Board.

REPORT OF TRUSTEES.

OFFICE OF THE BOARD OF TRUSTEES OHIO STATE UNIVERSITY,
COLUMBUS, OHIO, *November 15, 1887.*

Hon. JOSEPH B. FORAKER, *Governor of Ohio:*

SIR: In compliance with law the board of trustees respectfully submit the seventeenth annual report of the Ohio State University.

The accompanying report of the president is for the year ending November 15, 1887; the reports of the other members of the faculty are for the university year ending in June, 1887. The report of the treasurer shows in detail the receipts and disbursements of the funds of the university, exclusive of appropriations made by the general assembly. The detailed statement of the disbursements of said appropriations will appear in the report of the auditor of state.

The part of the irreducible debt of the state which forms the permanent endowment of the university remains the same as shown by the last annual report, to-wit: \$587,841.46, upon which the annual interest is \$32,270.48.

The receipts from various sources, exclusive of state appropriations, and including the balance in the hands of the treasurer, November 15, 1886, have been as follows:

Balance in hands of treasurer November 15, 1886..	\$11,336 73
Interest on endowment..... ..	32,270 48
Term laboratory fees of students..... ..	5,864 90
Sale of Virginia military lands..... ..	3,041 42
Rents of residences..... ..	1,950 00
Supplies sold to students..... ..	141 27
Sale of old iron..... ..	32 01
<hr/>	
Total receipts..... ..	\$54,636 81

The disbursements of said funds have been as follows:

Salaries	\$34,251 63
Ordinary repairs	2,963 00
Fuel and care of buildings.....	1,083 49
Department supplies.....	3,442 18
Printing and advertising.....	1,470 08
Water rents.....	428 99
Attendance farmers' institutes.....	215 58
Furniture	\$ 194 45
Expenses Virginia military lands.....	338 70
Repairs Virginia military lands, residences.....	340 13
Improvement of farm.....	652 11
Miscellaneous	1,816 85
<hr/>	
Total disbursements.....	\$47,197 19
Balance in hands of treasurer November 15, 1887.....	7,439 62

In said accounts are included the funds received from the sale of the Virginia military lands, which have not been used in building and maintaining residences for the professors, in accordance with the act of April 17, 1882. The balance of said funds in the hands of the—

Treasurer November 15, 1886, was	\$6,888 14
Receipts during the year.....	3,041 42
<hr/>	
Total	\$9,929 56
Expenses incident to sale.....	338 70
Repairs, residences of professors.....	340 13
<hr/>	
Total.....	678 83
<hr/>	
Balance, November 15, 1887.....	\$9,250 73

Since the repeal of section six of the act of April 3, 1873, such balances have been carried into the account of the current funds of the university.

The face value of the outstanding collectible notes received from the sale of said lands is \$3,032.34.

To show fully the actual receipts and disbursements of the university for the last fiscal year, there must be added to the amounts mentioned in the report of the treasurer, the sums received from appropriations made by the general assembly, and paid on warrants of the auditor of state. Below is given a tabulated statement showing the balances of the several state appropriations November 15, 1886, the amounts appropriated during the year, the total amounts subject to draft, the disbursements during the year, and the balances to the credit of said state appropriations November 15, 1887:

Name of appropriation.	Balances Nov. 15, 1886.	Appropriated during the fiscal year 1887.	Total amounts subject to draft during fiscal year.	Expended during year ending Nov. 15, 1887.	Balances Nov. 15, 1887.
Ordinary repairs.....	\$223 50	\$2,500	\$2,723 50	\$2,682 00	\$41 50
Expenses of trustees.....	266 53	500	766 53	386 80	379 73
Fuel and care of buildings.....	828 33	2,000	2,828 33	2,253 54	574 79
Improvement of campus	392 45	800	1,192 45	780 00	412 45
Laboratories.....	186 56	.....	186 56	181 05	5 51
Repairs, gas-works.....	.....	2,000	2,000 00	1,919 00	81 00
Green house.....	450 00	600	1,050 00	600 00	450 00
Library	1,557 86	1,000	2,557 86	2,054 18	503 68
Veterinary museum, etc.....	1,899 96	.....	1,899 96	1,884 95	15 01
Equipment horticultural de- partment.....	45 97	.....	45 97	44 00	1 97
Equipment laboratory agri- cultural chemist... ..	07	.....	07	.....	07
Addition to mechanical de- partment.....	2 92	.....	2 92	.....	2 92
Salaries of teachers	84	10,000	10,000 84	9,998 33	2 51
Totals	\$5,854 99	\$19,400	\$25,254 99	\$22,783 85	\$2,471 14

The following table shows the disbursements from the current funds added to those made from state appropriations:

Purpose for which disbursed.	Paid out of state appropriations.	Paid out of cur- rent funds.	Total.
Ordinary repairs	\$2,682 00	\$2,963 00	\$5,645 00
Expenses of trustees	386 80	.....	386 80
Fuel and care of buildings.....	2,253 54	1,083 49	3,337 03
Improvement of campus.....	780 00	.....	780 00
Laboratories	181 05	.....	181 05
Repairs of gas-works	1,919 00	.....	1,919 00
Green house	600 00	.....	600 00
Library	2,054 18	.....	2,054 18
Veterinary museum	1,884 95	.....	1,884 95
Equipment horticultural department.....	44 00	.....	44 00
Salaries of teachers, etc	9,998 33	34,251 63	44,249 96
Printing and advertising .....	.....	1,470 08	1,470 08
Water rents .....	.....	428 99	428 99
Attendance farmers' institutes .....	.....	215 58	215 58
Furniture .....	.....	194 45	194 45
Expenses Virginia military lands.....	.....	338 70	338 70
Repairs Virginia military lands, residences.....	.....	340 13	340 13
Department supplies .....	.....	3,442 18	3,442 18
Improvement of farm .....	.....	652 11	652 11
Miscellaneous .....	.....	1,816 85	1,816 85
Totals	\$22,783 85	\$47,197 19	\$69,981 04

From the foregoing it appears that the total receipts of the university for the fiscal year, including balances on hand November 15, 1886, have been as follows:

Current funds	\$54,636 81
State appropriations.....	25,254 99
	<hr/>
Total receipts	\$79,891 80
Disbursements:	
Current fund	\$47,197 19
State appropriations.....	22,783 85
	<hr/>
Total disbursements	\$69,981 04
	<hr/>
Leaving a balance November 15, 1887	\$9,910 76

of which \$2,471.14 is in the state treasury to the credit of the several state appropriations, and \$7,439.62 is in the hands of the treasurer of the university.

It will also be seen from the foregoing statement that the expenditures for ordinary repairs was \$2,963 in excess of the appropriations made by the general assembly for that purpose.

\$2,735 of such excess was caused by an extraordinary outlay in repairing the falling tower of the main university building during the year 1886, and which was reported as a deficiency in the last annual report. The general assembly having failed to appropriate the necessary funds to meet this deficiency, the cost of such repairs was paid out of the current funds of the university. The trustees hope that the general assembly will make the necessary appropriation to refund to the university the amount so expended. The act of congress making the grant upon which the university was founded provides that "no portion of the fund" derived therefrom, "nor the interest thereon, shall be applied directly, or indirectly, under any pretext whatever, to the purchase, erection, preservation, or repair of any building, or buildings," and the general assembly, in the act of February 9, 1864, accepting such grant, pledged the faith of the state to the performance of all the conditions and provisions of said grant. There is therefore an express obligation on the part of the general assembly to make all necessary appropriations for the preservation and repairs of the buildings of the university.

The appropriations for ordinary repairs for the year 1887 have been expended in repairing the water-closets, and the steam-heating in the west wing of the main building, in replacing the plastering where it had fallen off, and in making those repairs of roofs, chimneys, con-

ductors, etc., which most needed attention. A much larger sum could have been used to advantage.

The entire steam-heating, including the boilers, tanks, cisterns, etc., need thorough repairs, and roofs, conductors, cornices, window casings, and other wood-work need repainting to preserve them from decay. The trustees hope that liberal appropriations will be made for this purpose in order that the buildings may be put in good condition in anticipation of the crowds which will probably visit the institution during the coming centennial.

Of the appropriation of \$2,000 for repairing the gas-works, \$1,919 has been expended in erecting two new benches of two retorts each, with the necessary appliances, including condenser, scrubber, and an additional purifier, with by-pass valves for purifiers and station meter. A station meter has been ordered at a cost of \$125, which will exhaust the appropriation. The necessity for lighting the university grounds and drives, and the approaches to the several buildings, was set forth in the last annual report. This necessity is increased in view of the great crowds that will probably be drawn to the vicinity during the coming year. The works are now ample to supply all the lamp posts needed to thoroughly light the grounds, and also to supply the residences of the various professors, and the trustees will ask the legislature for a small appropriation for laying the mains, and providing the posts and fixtures.

The appropriation for the library has been expended in the purchase of books and periodicals, and in binding periodicals and shelf-worn volumes. The report of the librarian shows that the number of volumes in the library, exclusive of some 2,000 pamphlets, was on the 22d day of June, 1887, 7,708, of which number 864 had been added during the year. The number at the date of this report is about 8,000.

Great care has been exercised in the selection of the books, and the collection, so far as it goes, is admirably adapted to the needs of the institution. It is still, however, very inadequate to meet the growing wants of a university. Many of the departments are in need of books on special subjects, which cannot be obtained without more liberal appropriations.

In this connection, attention is called to the report of Prof. Norton, where he again recommends the purchase of Liebig's Annalen, to the report of Prof. Eggers, wherein he states the necessity for books of reference for the higher work in German, and to the importance of larger additions to the works on history and political science so strongly presented by Prof. Knight in the report of his department. The general needs of the library are set forth in the report of Prof. Derby, the librarian, to whom great credit is due for the intelligent care which he

has exercised in its behalf, and the trustees cordially indorse his recommendation and that of President Scott, in favor of larger annual appropriations for its support.

The state appropriation for the campus has been used to care for and improve its general features. A rustic bridge has been built across the stream flowing through it, the walks and drives have been re-graveled, and a house for preserving and propagating plants for its adornment has been erected. Attention is invited to the report of Professor Lazenby, superintendent of the grounds, and to the recommendations therein contained.

A brick walk between the main buildings and the horticultural hall should be constructed at the earliest practicable day, and a fountain at the lake, to be supplied by the water-tank in the main building, would add much to the attractiveness of the grounds.

In this connection attention is again called to the project of a botanical garden and arboretum at the university, which has long claimed a share of public attention, and has been strongly advocated by the state horticultural society. The benefits to flow from its establishment are presented in former annual reports, and are again set forth in the reports of President Scott and Professor Lazenby. The grounds of the university are well adapted to this purpose, and the trustees again renew the recommendation for an appropriation of \$5,000 to be expended therefor.

In August, 1882, Mr. Samuel Kendrick, of Chillicothe, was authorized by the board of trustees "to discover, survey, plat, cause to be appraised, and sell undiscovered lands in the Virginia military district belonging to the Ohio State University, and known as Virginia military lands. The sales and the conduct of all litigations and negotiations concerning the same to be reported to the executive committee of the board of trustees, and by said committee approved before the same should be binding upon either party."

After said approval, all expenses of surveying, appraising, or litigating, and other necessary expenses incurred, save and except the time given by said Kendrick, were to be paid out of the fund received from said lands, and of the residue remaining said Kendrick was to pay over to the treasurer of the university $66\frac{2}{3}$ per cent. The said Kendrick was authorized to compromise and settle any case or cases with the approval of said executive committee, such authority to terminate November 10, 1883.

The said Kendrick was to be entitled to $33\frac{1}{3}$ per cent. of the net proceeds of all cases reported by him, and approved by said committee and not finally settled at the date fixed for the termination of such

authority. On February 23, 1887, Mr. Kendrick was authorized by the board "to pursue to determination all cases of lands by him discovered and heretofore by him reported to the board on the terms of his former contract," with the understanding that such authority should terminate at any time on sixty days' notice by the board of trustees.

Up to this date Mr. Kendrick has reported 142 discoveries, embracing in the aggregate over 25,000 acres. Some of these lands have been sold at the appraisement, and in some cases compromises have been made. The amount of such land disposed of during the last fiscal year was $3,945\frac{1}{2}$ acres, the net proceeds therefrom being \$2,477.85. The recovery of said lands will probably be attended with expensive litigation, and it is not likely that the additions to the revenues of the university from this source will be large. Few suits for the recovery of said lands have been authorized, and the board prefers to convey said lands to the occupants for a small consideration by way of compromise.

The number of professors employed by the university is 16; assistant professors, 5; assistants, 4. Their positions and compensation is shown elsewhere in this report.

At the close of the last university year, George C. Comstock, professor of mathematics and astronomy, resigned to accept the position of professor of astronomy and associate director of Washburne Observatory, at the university of Wisconsin. During the two years Professor Comstock was connected with the institution he exhibited marked excellence as a teacher, and won the confidence and respects of his associates. His loss was deeply regretted. The fact that he left the institution to connect himself with a similar one in a less favored state, because of its superior equipment in his chosen specialty, is a significant one, and worthy of thoughtful consideration.

Professor R. D. Bohannon, a graduate of the university of Virginia, has been elected to the chair made vacant by Prof. Comstock's resignation, and entered upon his duties at the beginning of the present term. He comes to us very highly recommended by the faculty of his alma mater, and by the professors of the universities of Cambridge, England, and Gottingen, Germany, where he pursued post graduate studies.

The detail of Lieut. A. P. Blocksom, as professor of military science and tactics, expired July 1, 1887, and he was succeeded by Lieut. Chas. E. Kilbourne, 3d Artillery, U. S. A.

Lieut. Blocksom, during the three years in which he was connected with the university, was very successful as a military instructor, and brought the military department to a high state of efficiency. His successor, Lieut. Kilbourne, brings to his new duties large experience and

fine talents, and we are confident that the efficiency of the department under his direction will be maintained.

Mr. Benjamin W. Snow, assistant in the department of physics, also resigned at the close of university year to pursue a course of study in Europe, and later Dr. David O'Brine, who for ten years had served as assistant in the department of general and applied chemistry, tendered his resignation to accept the position of professor of agricultural chemistry in the university of Colorado. Cheerful testimony is borne to the fidelity and zeal with which both these young men discharged the duties imposed on them while connected with the university.

Frederic Keffer, a graduate of the Ohio State University of the class of 1882, has been chosen to succeed Dr. David O'Brine, and Joseph F. Whitney, a student of the Massachusetts Institute of Technology, to succeed Mr. Snow, both entering upon duty at the beginning of the present term.

The department of history and English language and literature, which has been under the very able direction of Professor Knight, assisted by Mr. A. H. Welsh, has been divided, Professor Knight being placed in charge of the chair of history and political science, and Mr. Welsh in charge of the department of English language and literature as assistant professor. The foregoing are all the changes in the faculty during the last fiscal year.

The number of students in attendance during the last academic year was as follows:

Full term, 324; winter term, 283; spring term, 253. The number in attendance at the present time is 335. The numbers in the several departments and classes, and the course of instruction pursued in each, are shown in the reports of the president and faculty, and in the catalogue which is made a part of this report.

At the commencement in June, 1887, on the recommendation of the faculty, the following degrees *in cursu* were conferred upon the parties named below:

William Filson Charters, New Lisbon,	Degree of B. Ph.
Howard Pendleton Converse, Columbus,	" B. Sc.
Harry Corns, London,	" B. A.
Fredericka Detmers, Columbus,	" B. Sc.
Vernon Judson Emery, Napoleon,	" B. A.
William Hamilton Hannum, Lancaster,	" B. A.
Robert Hazlett, Jr., Wheeling, W. Va.,	" C. E.
Wilby Grimes Hyde, New Holland,	" B. A.
William Franklin Hunt, Miamisburg,	" M. E.
William McPherson, Jr., Xenia,	" B. Sc.
Annie Mullay, Columbus,	" B. Ph.

Joseph Simmons Myers, Columbus,	Degree of B. A.
Uriah Henry Myers, Columbus,	" E. M.
Halbert Edwin Payne, Fostoria,	" M. E.
Frank Arnold Ray, Jefferson,	" E. M.
Archibald Crawford Reeves, Dayton,	" C. E.
Daisy Medill Scott, Columbus,	" B. A.
May Mermod Scott, Columbus,	" B. A.
Joseph Russell Taylor, Marietta,	" B. A.
Henry Julian Woodworth, Jefferson,	" B. Sc.
Oscar Clemens Zaumseil, Ripley,	" C. E.
Mark Francis, Paddy's Run,	" D. V. M.
Arthur Theodore Heath, Cuyahoga Falls,	" Ph. G.
Charles Henry Krieger, Columbus,	" Ph. G.
George Frederic Weidner, Cuyahoga Falls,	" Ph. G.

The degree of Doctor of Philosophy was conferred by the board of trustees upon Burke A. Hinsdale, of Cleveland; James J. Burns, of Dayton; and Alston Ellis, of Hamilton; and the degree of Doctor of Veterinary Medicine upon Dr. N. S. Townshend, professor of agriculture at the university.

The university farm, under the efficient supervision of Mr. W. S. Devol, a graduate in the agricultural course of the university, is in excellent condition. His report as superintendent of the farm, filed herewith, shows the receipts for the year ending November 1, 1887, to have been \$4,824.49; expenditures, \$5,483.48, leaving a deficiency of \$659.99, which, however, is more than covered by bills and accounts receivable.

The report also shows in detail the farm operations during the year, an account of the field experiments, the improvements made, the number and value of stock and farm implements, and the amount and value of grain, feed and other products, raised, consumed and sold. The board of trustees in February appropriated \$800, to be expended under Mr. Devol's direction in repairing fences, cleaning an island in the river and walling up the manure-pit at the farm barn. Six hundred and fifty-two dollars of said amount has been expended, and the result is a marked improvement in the appearance of the farm. Mr. Devol, while superintending the farm for the university, has also had charge of the field experiments of the experiment station, the results of which have been published in the bulletins and reports of said station. The farm operations and experiments have been utilized as far as practicable in illustrating the work of the numerous classes in agriculture and allied branches, and at the same time have afforded many students an opportunity to earn a portion of their expenses while attending the university.

The trustees hope that in any arrangement, made with the experiment station, such opportunities may be increased rather than diminished.

That part of the farm devoted to experiments in horticulture and vegetable gardening has been under the direction of W. J. Green, as superintendent of the gardens, whose report is also filed herewith. Said report shows receipts to have been \$840.34; expenses, \$840.08, leaving a balance of 26 cents.

The prevailing dry weather proved disastrous to the operations in this department of the farm. The report shows in detail the operations, including an account of the experiments conducted during the year. Mr. Green performed a similar office for the experiment station, and his reports were also published in the bulletins and reports of the station.

At the June meeting of the board of trustees Dr. Townshend suggested the propriety of offering a limited number of free scholarships in the short agricultural course. The board looked with favor upon the project, and appointed President Scott and Dr. Townshend a committee to carry it into effect. The committee, with the approval of the trustees, decided to offer one such scholarship to each county in the state, the student in each case to be chosen and recommended by the county agricultural society. It is to be regretted that the offer was made so late in the season and was so little understood. A few counties took advantage of the opportunity offered. The proposition, however, was left open for next year, when it is to be hoped more students will avail themselves of the privilege.

The increased attendance and interest in what may be called the agricultural departments of the university is one of the marked features of the year's progress. The classes in agriculture, in botany and horticulture, in agricultural chemistry, are larger than ever before, indicating a growing appreciation of the opportunities offered by the university to those who wish to engage in agricultural pursuits. In this connection special attention is invited to the reports of Dr. Townshend, Professors Lazenby and Weber, and Dr. Detmers, and to the suggestions and recommendations made by them for the development of their respective departments, all of which have the cordial approval of the board of trustees.

Prof. Orton again renews his request for a separate fire-proof building for the geological museum. In the annual report of his department for the year 1885, he presented the argument in favor of such a structure so cogently that it is here reproduced. He said:

"The truth is that the museum needs a building for itself, and I trust that the time has now come when we may set about the work of providing suitable quarters

for it, with good promise of success. We must distinctly recognize the fact that suitable provision will require considerable outlay. It is easy to lay down a number of points that should be observed in the construction of a museum building. (1) It should be built of Ohio stone. (2) It should be fire-proof. (3) It should furnish one example on the college grounds of a building properly constructed, heated and ventilated. (4) It should be large enough to provide for the natural growth and expansion of such a collection as it would contain.

"In regard to the first point, it is only necessary to say that our own state furnishes the largest amount, and, in many respects, the finest quality of building stone of any state in the union. Our museum should be made a proper representative of this great interest. Several of the leading varieties should find place in its construction. I have but little doubt that the public spirit and business sagacity of our quarrymen would make it possible for us to obtain the best building stone of the state on unusually favorable terms. Competition might well arise among the great centers of production as to finding places in such a building, inasmuch as it would form a most conspicuous and permanent advertisement of the materials used in it.

"It needs no argument to show that a building designed for such use should be fire-proof, but in addition to the obvious reasons for this requirement, I may add that if a proper place were furnished by the university, adapted both to the proper display and permanent preservation of the materials entrusted to the valuable collections of fossils and minerals would be sure to come to us. There is one cabinet of fossils in the state, to-day, on which many thousands of dollars and many years of enthusiastic labor have been spent, and which would be an ornament to any museum in the world. That I believe we could confidently count upon, if we could offer a safe and suitable repository for it."

The trustees have repeatedly recorded themselves as earnestly favoring an appropriation for such a building. It is needed to insure the safe preservation of the valuable collection which is constantly in danger of destruction by fire, and also as a temporary depository for the library until suitable provision can be made for it.

It is one of the first and most pressing needs of the institution, and we hope that the request for the necessary appropriations will not be disregarded.

The department of zoology and comparative anatomy, under the able direction of Professor Tuttle, is struggling with inadequate equipment to keep abreast of the other leading departments of the university. The importance of the study of practical anatomy and physiology cannot be overestimated. They are now required studies in all the agricultural and engineering courses, and elective in the arts and philosophy courses. Notwithstanding this fact, few important additions to its equipment have been made since a time when the number of students was less than one-half of what it is now. To properly equip this department and supply the many duplicates required for the proper convenience of students, will require a larger outlay than the current funds of the university can supply, and therefore for a number of years the board of trustees have asked the legislature to appropriate the amount necessary for such equipment.

The sum of \$5,000 is needed for this purpose.

The department of mining and metallurgy, under the efficient direction of Professor Lord, and which has turned out some of the brightest graduates of the institution, has been recently inspected by a committee of the Ohio institute of mining engineers, with a view to ascertaining its needs and what means should be adopted to assist the university in supplying them. Such committee has suggested that the department needs, and should have, in order to fully answer the purposes of its creation, as defined in the act of May 7, 1877 [O. L., 74 V., p. 216];

“1. A collection of drawings illustrating Ohio mining practice—such as the manner of draining mines, raising coal, laying out the underground workings, the various methods of ventilating mines, etc.

“2. A collection of mining engineering instruments, safety-lamps, etc.

“3. Models of systems of timbering in drift and shaft mines, in sinking for coal, and carrying forward the underground excavations.

“4. Models illustrating underground haulings by mine locomotives, by tail rope and by horse-power.

“5. Such assistance to Professor Lord in the way of instructors as will cover the needs of the department.”

The suggestions and recommendations of said committee, representing, as it does, the industry second in importance in the state, deserves and should receive due consideration.

The trustees, however, are convinced that any material additions to the equipment of the department will be of little value, unless supplemented by some permanent provision sufficient to employ additional instructors in class-room and laboratory. Such provision should be made as soon as practicable, so that this important branch of industrial education can be expanded to meet the present and growing demands.

Special attention is directed to the report of Professor Thomas, wherein he presents the condition and needs of the physical department.

The necessity for special equipment in order to give a thorough course in electrical engineering is urgent. The marvelous growth of electricity as an applied science, and its increasing use for lighting and motive power, furnish a strong argument in favor of a course of training in the methods of its application.

Such a course is scarcely less important than those in civil, mechanical and mining engineering, and should be provided at the earliest practicable moment.

Attention is also invited to the report of Professor Robinson in charge of the department of mechanical engineering. The report of Professor Brown, of the department of civil engineering, and the report

of Mr. Bradford, instructor in drawing. All indicate a growing interest in these important branches, and call attention to needed additional equipment, which the trustees hope can soon be supplied.

The department of general and applied chemistry, under the supervision of Professor Norton, is well equipped and admirably sustained; his interesting report shows the gift of valuable cabinets and collections illustrating industrial chemistry, for which due acknowledgment is made. His request for a copy of Liebig's Chemical Annals is mentioned with approval elsewhere in this report.

Special attention is invited to the report of Prof. Knight in charge of the department of history and English language and literature, and to the pride expressed at the successful introduction of the course designed for original study and research in the institutional and financial history of the United States, thought to be the first trial of this method on Ohio soil. The division of this important department elsewhere mentioned in this report will, it is believed, greatly increase the efficiency of both its branches, Mr. Welch, who has a wide reputation as an author, will hardly fail to make the department of English language and literature highly attractive. The department of mathematics and astronomy in charge of Prof. Comstock, assisted by Lieut. Blocksom and Mr. McCord, was ably conducted and unusually efficient. Under Prof. R. D. Bohannon, who has had charge during the present term, its efficiency is well sustained. In the last annual report attention was called to the necessity for some provision for the school of pharmacy. It was then suggested that any money expended for fitting up a laboratory for its accommodation in any of the buildings in their present crowded condition would be largely thrown away, and that the wisest and most economical provision for it would be an addition to the building occupied by the chemical laboratories large enough to provide lecture-room, store-room and laboratory. It was suggested that such a building could be built and equipped for five or six thousand dollars. This department has now reached that point when such provision must be made or it must be abandoned.

The number of students in attendance, and the thoroughness of the instruction imparted make its continuance desirable. It was intended to supplement the legislation providing for a state board of pharmacy, and requiring examinations of all persons engaged in such business, and it is hoped that the general assembly will see the wisdom of granting the necessary appropriations for making it one of the permanent schools of the university.

The department of military science and tactics, under the direction of Lieutenant Blocksom, had a most prosperous year. The battalion of

cadets under his command reached a high state of discipline and great proficiency in drill. A company of selected men, under the command of Captain W. S. Crawford, was permitted by the faculty to attend the celebration of the discovery of natural gas at Findlay, Ohio, in June, and compete for the prizes there offered. It brought home a prize of \$500, which it obtained in competition with some of the best drilled military companies of the state. This triumph has awakened increased interest in military studies and exercises, and the battalion was never in better condition. It will be seen from the report of Lieut. Kilbourne that it numbers at the present time 234 men. A band has been organized, which promises to add to the attractiveness of the military exercises.

The board of trustees in the last annual report asked the legislature for an appropriation for an armory and gymnasium. The necessity for such a building is again presented in the report of President Scott, and is recommended by Lieut. Kilbourne. It is thought that such a building can be erected and equipped for the sum of \$40,000, and so arranged that it could be used as an assembly hall for public occasions, such as university day and the annual commencement. The board renews its request for such appropriation.

Attention was called in the last annual report to the effort that had been successfully made to establish closer relations between the university and the Ohio agricultural experiment station, which since its creation has been located and has conducted its experiments on the university farm. By the arrangement thus made, and which still continues, the farm was set apart for experimental work, under the direction of officers and agents, whose appointment was mutually satisfactory to the board of control of the station and the trustees of the university. It was hoped from this arrangement, that the experiments might be more varied, conducted on a broader scale, and thus made more valuable to the public, while the departments of the university in which are taught the branches relating to agriculture would be benefitted by the increased facilities afforded for practical instruction in said branches. During the year congress passed what is known as the Hatch bill, providing for an annual appropriation to each state of \$15,000, to be used in agricultural experiments and investigations. The bill, as originally drawn, was intended to supplement the land grant upon which the university was founded. As passed it provided that in states where there is an agricultural experiment station, separate from the land grant college, the legislatures of such states might place the fund, so granted, partly or wholly under the control of the agricultural experiment station. Soon after the passage of said act the general

assembly of Ohio passed a resolution, placing said fund wholly under the control of the experiment station.

Under a mistaken impression that the act of congress made an immediate appropriation, the legislature failed to make the usual provision for the support of the station, and it awaits the action of congress before entering upon the more extended work which larger means will enable it to carry on. For this reason, we suppose, no change in the plans of said station have been reported to this board. When congress shall have made the necessary appropriations provided for by the Hatch bill the board of control of said station will doubtless desire to still farther vary and extend its investigations and experiments. All needed facilities therefor can be provided at the university, and it is to be hoped that the relations now existing between the station and the university can be maintained, or if modified, that it can be done with increasing benefits to the station and the university.

For a number of years the board of trustees have cheerfully co-operated with the state board of agriculture in its efforts to make the farmers' institutes interesting and instructive to the farmers of the state. The professors of the university have been encouraged to attend them and deliver lectures, and their expenses, while so engaged, have been paid by the university. During the past year President Scott and Professors Townshend, Orton, Tuttle, Lord and Weber, and Doctor Detmers have spent in such work such portions of their time as could be spared from their classes. Such expense has been incurred in the hope that it would bring the university into closer relations with the people of the state, and afford the professors so engaged an opportunity to present the advantages offered by it for thorough training in the branches relating to agriculture and the mechanical arts.

The department of French, under the direction of Miss Williams, and that of German, under Prof. Eggers, are well conducted. The work of these departments has heretofore been mainly directed toward teaching the student to read the French and German of scientific and technical works. It is to be hoped that in the near future the university may be enabled to provide and offer courses for a thorough study of these languages.

The department of Latin, under the very able direction of Prof. Derby is well managed, and his report shows gratifying progress. The department of Greek, under Prof. Smith, is equally well conducted. The recommendation of Prof. Derby for the establishment of a classical museum is worthy of consideration. As the classics are, by the terms of the land grant, not to be excluded from the curriculum, they should be

as well taught as a proper application of the income of the university will permit.

The board of trustees will ask the general assembly for the following estimated appropriations for the ensuing year.

Expenses of trustees.....	\$ 500
Salaries.....	10,000
Ordinary repairs.....	3,000
To refund amount paid for repairing tower.....	2,735
Fuel and care of buildings.....	3,500
Care of green house.....	1,000
Care and improvement of grounds.....	1,500
Library.....	5,000
Extension of gas mains, lamp posts, fixtures, etc.....	1,500
Equipment department of zoology and comparative anatomy.....	5,000
Centennial exhibit.....	1,000
Equipment for course in electrical engineering.....	6,500
Equipment, department of civil engineering.....	1,000
Military department.....	3,500
Building, department of pharmacy and equipment.....	8,000
Total	<hr/> \$53,235

The necessity for these appropriations is set forth in the foregoing pages of this report, and in the reports of the president and faculty, which are submitted and made a part hereof.

The year has been one of substantial progress in all departments of the university. The president and faculty have been faithful and zealous and the students orderly and industrious. The trustees have endeavored with the means at their disposal to provide for its proper growth and expansion.

It has already become a seat of learning whose reputation and influence extend far beyond the borders of our own state. In some respects its equipment is below what it should be. It needs and should have the more active and cordial support and encouragement of the people of the state, whose institution it is. A liberal and generous policy on the part of the general assembly, which is its proper guardian, would soon make it one of the model institutions of the country. It is indebted to the land grant for its endowment, and to the the generous gift of Franklin county for its land and principal building. In recent years the general assembly has made the following appropriations for buildings, equipment and current expenses: In 1882, \$31,850; 1883, \$21,850; 1884, \$10,450; 1885, \$25,500; 1886, \$19,600; 1887, \$19,400. The spirit manifested by the legislature has encouraged the friends of the university to hope that the bounty of the general government and the generosity of the people of Franklin county will soon be supple-

mented by ample appropriations sufficient to provide for all its growing wants. For a number of years the trustees have recommended and urged the setting apart of a fraction of a mill on the grand duplicate of the state for the support and maintenance of the university as has been done in other states, where the wisdom of such provision has been abundantly shown. Such recommendation is again renewed. The institution will not reach its highest usefulness until some such provision is made. The above suggestions and recommendations are respectfully submitted for the consideration of your excellency and the general assembly. Being yourself an alumnus and an honored trustee of a similar institution, familiar with the progress of knowledge and the growing needs of a great seat of learning, the friends of the university confidently hope that you will lend the weight of your great influence toward making it, what it should be, the crown of the educational system of the state.

Very respectfully,

ALEXIS COPE, *Secretary.*

THE ANNUAL REPORT OF THE PRESIDENT.

Hon. L. B. Wing, President of the Board of Trustees:

The president of the university has the honor to submit the following as his annual report for the year ending November 15, 1887.

The teaching force of the last collegiate year consisted of twenty-five members,—sixteen professors, one assistant professor, three instructors, one lecturer, and four assistants. At the end of the year two of the instructors and one of the assistants were given the rank of assistant professors.

The university suffered a serious loss in the resignation, at the last commencement, of professor of mathematics, George C. Comstock. Although when he came to us two years ago, he was almost without experience as a teacher, it was soon apparent that he possessed exceptional qualifications for the position. He was greatly esteemed, not only as an instructor, but as a member of the faculty, and his departure has been a cause of general regret. A quorum not being present on the first of September, at the meeting of the board of trustees, called to fill the vacancy created by Professor Comstock's resignation, and it being important that the question should be decided without further delay, the executive committee appointed R. D. Bohannon, who has been for several years assistant in mathematics and physics at the University of Virginia. Professor Bohannon is a graduate of the University from which he now comes, has studied mathematics both at Cambridge, England, and at Gottingen, Germany, and has had an extended and successful experience in teaching.

At the close of the year Benjamin W. Snow, assistant in physics, severed his connection with the university. Mr. Snow had been here but one year, yet he had proved himself a competent instructor and had won the confidence of both faculty and students. His place has been filled by the appointment of Joseph T. Whitney.* Mr. Whitney received his education at the Massachusetts Institute of Technology.

During the vacation David O'Brine, who has for eight years been assistant in the department of general chemistry, accepted the chair of

chemistry and geology in the university of Colorado. Dr. O'Brine's services have been assiduous and faithful, and were much appreciated by the head of the department in which he was employed. The duties of his former position are now performed by Frederic Keffer, of the class of 1882. Mr. Keffer has had not only the training in chemistry that is given in this department, but also that of the department of mining and metallurgy, and is quite equal to the demands of the present position.

I hereby recommend that the appointment of R. D. Bohannan, as professor of mathematics, that of Joseph T. Whitney, as assistant in physics, and that of Frederic Keffer, as assistant in chemistry, be confirmed by your honorable board.

With the year, the time for which Augustus P. Blocksom was detailed as instructor in military science and tactics in the university, expired. Lieutenant Blocksom was a capable and efficient officer, and took great interest in the training of the battalion. It was mainly through his vigor and zeal that the creditable successes of the last two years were won. His successor, Charles E. Kilbourne, First Lieutenant, Second Artillery, U. S. A., reported for duty on the sixth day of July, and has had charge of the military department during the current term with very gratifying results.

The number of students in attendance within the last collegiate year, was three hundred and thirty-seven, representing, ten states and the District of Columbia.

Resident graduates.....	1
Seniors	22
Juniors	28
Sophomores.....	33
Freshmen.....	61
Special.....	7—151
Briefer courses—	
Agriculture (two years' course).....	24
Veterinary medicine.....	4
Pharmacy.....	13— 41
Preparatory—	
Second year.....	52
First year.....	74
Irregular	18—144
Total in all classes.....	337

The distribution of the students in the four regular college classes by courses is shown in the following table:

	Totals.	B. A.	B. Ph.	B. Sc.	B. Ag.	C. E.	M. E.	E. M.
Seniors	22	8	2	4	...	3	2	3
Juniors	28	8	5	5	...	5	4	1
Sophomores...	33	3	10	7	...	6	4	3
Freshmen	61	11	15	12	2	10	10	1
Totals	144	30	32	28	2	24	20	8

In the three general courses, that is, those leading to the degrees of bachelor of arts, bachelor of philosophy, and bachelor of science, there were ninety students; in the four-year technical courses, fifty-four; and in the briefer technical courses, forty-one; making a total in the technical courses of ninety-five.

The number of women in attendance within the year was forty-six.

Resident graduate.....	1
Seniors	4
Juniors	1
Sophomores.....	4
Freshmen.....	16— 25
Preparatory—	
Second year.....	7
First year.....	10
Irregular	3— 20
Total.....	46

The whole number of candidates for admission as new students for the present year was one hundred and seventy-one.

At the examination in June.....	22
On and after September 12.....	149—171
Not received.....	30
Received.....	151
Junior	1
Sophomores.....	2
Freshmen	28
Special.....	3— 34
Preparatory—	
Second year.....	19
First year.....	65
Irregular.....	10— 94 128
Agriculture	14
Veterinary medicine.....	1
Pharmacy.....	8— 23
Total	151

The freshmen received from other schools entered the various courses as follows :

B. A., 8; B. Ph., 10; B. Sc., 5; C. E., 5; M. E., 2; total, 30.

The whole number of students enrolled this term is 338.

There has been an encouraging increase in the school of agriculture. The department of agricultural chemistry, which opened three years ago with three students, now has twenty-one, and next term the laboratory will be filled almost to its capacity. The special interest and care that your board and the faculty have shown in the encouragement of agricultural and kindred studies is beginning to produce its legitimate fruit. I am assured by friends of agriculture who have visited the agricultural colleges of other states that the facilities afforded here are not excelled; and when this fact is once known among the farmers of Ohio we may expect that their sons will seek the University in increasing numbers.

The longer course in agriculture has been so arranged that it is continuous with the shorter course; so that the student who has completed the latter will have to remain but three years more in order to obtain the degree of bachelor of agriculture. It is hoped, therefore, that hereafter the students who enter for the short course alone will, in many cases at least, become candidates for the degree.

Some, however, can not remain; and as they are, nevertheless, entitled to some evidence that they have completed a prescribed course in the University, I would recommend that a certificate be prepared and engraved to be given to students in agriculture who may discontinue their studies at the end of the two years' course.

The number of women in the University last year was 13.7 per cent. of the whole number of students. All of them were in the preparatory and general courses, no courses adapted especially to women having ever been announced. The University simply opens its doors to such woman as desire and are able to do the work that is offered. Frequent inquiries are made concerning instruction in drawing, painting, and music; but, strange to say, I at least have not received a single inquiry concerning instruction in household economy; and, though criticism has not been spared on account of other real or imagined deficiencies, no criticism, so far as I know, has ever been made, because no course is offered by which the daughter of a mechanic or a farmer may become a trained and intelligent housekeeper. There is a science of the kitchen and the dairy which is quite as real and quite as material as that of the stable, the orchard, or the farm. The application of sanitary science is nowhere more important than in the dwelling-house; but it is in vain that the most perfect appliances are furnished unless they are used with

intelligence; and in the vast majority of cases the use of all appliances for the preparation of food, for heating, for ventilation, and for cleansing are under the almost exclusive direction of the mistress of the home.

We have not now the means to provide for instruction of this kind; but the lack of it presents an opportunity which a woman of wealth desiring to confer a boon upon her sex might covet. The liberal endowment here of a department of domestic economy would bring comfort and health and the light of a larger intelligence into many future homes.

The increase in the number of departments of instruction and the introduction of a more extended elective system has rendered it necessary, in the minds of the faculty, to retain many of the preparatory students for recitations in the afternoon. This supposed necessity arises from the fact that the laboratories require, on certain days, all of the afternoon hours of the students who work in them. Such students must therefore have their class-room work in the forenoon, and that they may do this some classes formerly reciting in the forenoon must be displaced. As preparatory students have no laboratory work, they can recite in the afternoon without interference, and hence several of their classes have been transferred to the latter part of the day.

Seen from this point of view the arrangement is desirable; but from another it is a source of evil. Formerly when all preparatory students recited continuously through the forenoon, attended chapel and drill, and then were dismissed for the day, they had no time at the buildings which could be spent in idleness. As it is now those who recite in the afternoon have at least two vacant hours, one made vacant by the transfer of a recitation from the forenoon, and the one allowed for lunch. During these hours most of those who desire to study seek the library, which is in consequence overcrowded. Others study as they may on stairways, in windows, or in any class-room that may be vacant for the hour. But any who are disposed to be idle and careless, are likely to make more or less disturbance.

If, in the judgment of the board of trustees, it is best that we should continue to maintain a preparatory department, it is desirable on every account that the pupils who attend it should be brought together in a separate building and placed under a closer government. It would then be possible to adopt such methods of instruction and management as are adapted to their age and degree of proficiency, while the collegiate department would be freed from an element which is in some respects a considerable detriment to it. A tuition fee of ten dollars a term charged to preparatory students, in addition to the inci-

dental fee now charged, would provide for the additional appliances and teaching force made necessary by the proposed arrangement.

In my report two years ago I expressed the hope that a different method of selecting high schools from which to admit students to the freshman class would soon be adopted. The additional experience of these two years only strengthens my opinion that the present rule is inadequate. There are high schools in towns of five thousand or more inhabitants that entirely fail to prepare students for freshman work, while some towns of fewer inhabitants have high schools that do prepare, or with a little stimulus would prepare, their graduates very well. I trust that you will authorize the visitation of high schools by a committee of the faculty, who shall by personal observation of the teachers, appliances, courses of study, and actual work of the schools, ascertain which ones are qualified to fit students for the freshman year in the University.

The extension of the elective system has proved, in almost every respect, satisfactory. Students avail themselves freely of the opportunity it offers for choice, and genuine interest in study has been promoted. The year, however, has been, in a great degree, one of adjustment, and some studies which will hereafter be elective have been closed, because the students were still bound by obligations arising under the previous arrangement of the courses. In a few instances also classes in electives were not formed, because but two or three students desired them. In one case at least the results are not satisfactory. German, which is taken up at the beginning of the first preparatory year by students expecting to enter a course in science or engineering, has been introduced as an elective into the junior and senior years of the courses in arts and philosophy. As a result the youngest and most immature students in the University are thrown into the same classes with some of the most advanced and best trained. To adapt work to both of these grades is impossible. What is a trifling lesson for the junior or senior may be much beyond the capacity of the tyro. All the advantages of classification are lost. Yet it would seem unfortunate to deprive the students in arts and philosophy of the opportunity to study German. The proper solution of the difficulty would be the formation of two classes, one for beginners and the other for advanced students; but under present conditions this appears to be impracticable.

The new plan of examinations mentioned in my last report is generally, if not universally, recognized among us as better than the one previously followed. I believe that brief written tests more frequently made would be still better. Such tests would promote con-

tinuity of work on the part of students, for it would render regularity of attendance and steadiness of application indispensable to success; and the habit of continuity is one of the chief ends to be attained in education. To the teacher such tests would afford the most effectual means of keeping himself well informed of the progress of his class as individuals, of their points of strength or weakness, and would, at the same time, sustain and develop his sympathy with their work. At the end of a term spent in such close relations with his students he would be in the best possible position to judge of their respective merits.

Toward the close of the year what is known as the demerit system was abolished in all except the preparatory classes. For some time previous it had been suspended in the junior and senior classes, and the results were so satisfactory as to justify, in the opinion of the faculty, the permanent repeal of the rule for all college students. This action by no means exempts students from accountability; but instead of having a definite penalty measured out by law for each delinquency, they must answer for any abuse of their liberty to the teacher in whose class the delinquency occurs, or in cases of contumacy to the committee of the school in which they belong or to the faculty. For attendance and conduct at drill they are responsible to the officer in command, who may refer aggravated cases to the president or the proper committee.

The same system has been extended, as far as the law of the board of trustees permits, to attendance on the exercises in chapel. The daily record of absences has been temporarily dispensed with. The marking of rolls during the progress of religious exercises, or even at a meeting held for religious exercises, seems to be incongruous, not to say irreverent, and tends to counteract in many minds the salutary influence which the worship might otherwise have. It is also better for the students that they should attend freely, if they will, and that compulsion should be kept at the lowest point consistent with the attainment of its end. It has been carefully stated to the students, however, that attendance at chapel is required, that the suspension of the marking system is as yet but temporary, and that, in case they fail to attend of their own accord, the former method, or one equally strict, will be resorted to.

The average attendance since the suspension of marking has been about equal to that previously maintained, the students, as a body, manifesting a desire to prove that they are not unworthy of the confidence reposed on them.

It remains doubtful, however, in the minds of some, whether the

present plan is in full compliance with the rule of the board of trustees, adopted in June last, and reading as follows :

“ All students shall be required to attend the daily general exercises in the lecture-room, and this rule shall be enforced by the faculty.”

The adoption of this rule, you will remember, grew out of the fact that the former rule on the subject had been rendered uncertain in meaning by the abolition of the demerit system in the college classes. That system of enforcing attendance at chapel could now be applied only to preparatory students; but to make evident your purpose that the other classes should also attend, you enacted the present rule, that “all students are required to attend the daily general exercises,” meaning, as I understand, by “all students,” students of every class. That there may be no ground, however, for scruples on this point, I would suggest such a modification of the rule as to remove all doubt respecting the authority of the faculty to continue the present plan.

During the spring term two catalogues were issued. One of them was general and represented the University as a whole; the other was special and represented the school of agriculture and veterinary medicine. Of the former an edition of six thousand copies was printed, and these were widely scattered during the summer by mail and through the teachers' institutes. Of the other an edition of four thousand copies was printed. About half of them were sent by mail to the farmers of the state, and the rest will be distributed through the farmers' institutes this winter.

The practice prevails in most of the larger colleges of binding their reports and catalogues separately. It has evident advantages. Many who are interested in the reports care but little, if anything, for the catalogue, while a large proportion of those who desire the catalogue are young persons seeking information concerning the courses of study, equipment, expenses, and such matters. To them the reports are apt to be an incumbrance; yet, if the documents are bound together, we pay more than twice the necessary postage only to carry to such persons what they do not want. If we could have five thousand of our reports and catalogues bound separately, and could secure a good quality of paper in the catalogues, a cover of suitable color, and a careful correction of the proof, their value would be greatly enhanced.

The committee appointed by the board at its last meeting, consisting of Dr. Townshend and myself, agreed upon the details of the plan proposed by him for a system of free scholarships. Circulars were sent out announcing the offer of a free scholarship in the short course in agri-

culture to every county of the state, the selection of the recipient being left to the agricultural society of the county. It was expected that this offer would take effect generally for the year 1888-89, but it was made good also for the year 1887-88. A few counties took action immediately, and have sent students for the present year. There are now four such students in attendance, representing the counties of Clinton, Cuyahoga, Perry and Summit. Other counties have taken action since the opening of the college year. I think that we may expect nearly every county in the state to be represented next year—a consummation, I am sure, that we should all rejoice to see.

It may be well to consider the continuance of this offer, and the extension of it to the longer course in agriculture and the course in veterinary medicine. It would insure a better class of students, however, if we should make the scholarship dependent on success in a competitive examination. We ought to receive the best student that the county can send, and the scholarship should be a reward of merit.

The subject of free scholarships naturally suggests that of endowed scholarships. The free scholarship simply remits fees. The endowed scholarship offers maintenance. Some of the brightest and most ambitious minds are lost to the world from lack of the means of culture. A few hundred dollars judiciously bestowed each year, not as a charity, but in recognition of proved ability and scholarship, would in the course of years realize to many a young man the dream of his life, and would give to the state a succession of able and cultivated men. Where such scholarships have been wisely managed they have met with strong approval. They go on in their beneficent work time without limit, sending forth young minds of gifts and training to render better service to men. For what more noble object could wealth be devoted? If he is worthy of praise who endows a charity to feed the hungry, to clothe the naked, or to care for the sick, is not he worthy of much greater praise who opens the way for aspiring minds into freedom and light?

From the beginning of my connection with the University I have felt that there should be some direct instruction on the great themes of religious thought. The more earnest-minded students give to these topics no little attention, some in quiet reflection, others in discussion among themselves. It would be of inestimable advantage to them to come under the influence of minds that have read widely and thought honestly and deeply in this field. A single discourse from such a mind may answer questions or resolve doubts that have caused months of anxious perplexity; or, it may reveal methods of study and lines of argument that will prove a royal highway to a mind that has been

groping in the uncertain light which it has been able to strike out for itself. To those who have given to these subjects no serious consideration, such discourses may perform the still greater service of setting open before them new paths of inquiry, and awakening in them an interest in the very highest realms of human thought.

Some weeks ago I brought this subject to the attention of the executive committee of the board, and under their sanction I made an arrangement with Washington Gladden, D. D., to deliver a series of seven discourses on the relation of religion, in some of its leading aspects, to modern thought. The first one, on Evolution and Faith, was delivered in the University chapel Sunday, 6th November, and the second, on the Agnostic Philosophy, was delivered last Sunday, 20th November. The subjects announced and the reputation of the speaker created at once a general interest in the course; and the strength and clearness of the discussions have already given them a commanding influence. I earnestly hope that you will find it practicable to authorize an arrangement for a similar course to be delivered by one or several persons each year.

Perhaps there is no point on which the University has been more generally misunderstood than its attitude toward religion. It is christian, but undenominational. This is the true position, not only for a state university, but for any university. There is an essential unity of christian thought, a common ground of belief, which embraces all that is essential; and one of the peculiar and most conspicuous aims of Christianity is to bring mankind into a oneness of spirit. As we ascend toward the heights of christian life, arbitrary lines of separation fade from their sight. No institution of higher learning, therefore, ought to strengthen divisions by magnifying unimportant matters of belief. It should rather seek to cultivate breadth of view and catholicity of spirit. Happily the current of the time is set in this direction. The churches themselves are tending to uniformity, and are sinking their distinctions of doctrine out of view. But especially is this true of all great educational foundations. The first colleges of the country have outgrown the narrow and restraining peculiarities under which they passed their early history, and have become undenominational. But they have not ceased to be christian. They distinctly seek to inculcate religious doctrine and to foster religious sentiment. Nothing could more depreciate the value of higher education than that it should be given and received under the malign influence of a sordid utilitarianism or a dead materialism.

It is gratifying to say in this connection that the branch of the Young Men's Christian Association, founded in the University five

years ago, continues its organization and maintains regular services. It exemplifies christian unity in a practical way, since it includes members of eight different denominations, who work together in uninterrupted harmony. A few weeks ago a branch of the Young Women's Christian Association was organized, and it now holds weekly meetings for Bible study and devotional exercises.

The rapidly growing interest in industrial education is one of the signs of the times. It is but a result of the growing importance of the subject. To us it is a matter of immediate concern, because the duty is incumbent on us, first of all, to afford industrial education. By the terms of its creation the University is primarily, though not solely, an industrial institution, and we can not view with indifference the development of a condition of society which makes it more and more evident that such institutions are a special need of the time. In all the leading countries of Europe there is a settled conviction that the only way to hold any commanding place in the markets of the world is to train workmen in the science as well as the art of their occupations. Accordingly individuals, corporations, and governments have organized schools in which their workmen may be instructed. The result has been the development of manufactures, the improvement of the quality of their productions, and the diffusion of intelligence and self-respect among the laboring classes. The day has come which was predicted by Humboldt: "The time is not far distant when science and manipulative skill must be joined together."

In America we are but beginning to appreciate the vital relation of science to industry. But the subject is being rapidly forced upon us as it has been upon the older nations of Europe. Technological schools have been founded in various places, and some of them have had a remarkable growth. The land grant of 1862 contemplated "the liberal and practical education of the industrial classes," and was the fruit of a prophetic wisdom. It anticipated a condition which but few at that time were able to comprehend, but which is now becoming more and more apparent. Social pressure was then almost unknown among us; now the symptoms of it are manifest in almost every city, every mining district, and every great manufactory. The remedy lies, to a great extent, in wisely directed industrial education, and for that a foundation is already providently created. This foundation should not be administered, however, in a narrow and mechanical way, but with a spirit as broad and enlightened as that which gave it existence. It should not be suffered to degenerate into a means of making men better machines for the shop and the field, but should be constantly employed to awaken, to inform, to strengthen, and to direct the intellectual and moral pow-

ers, to make more skillful workmen, more intelligent citizens, nobler men. The special value of industrial education consists in the fact that, while it trains the eye and the hand, it sharpens the faculties and renders knowledge clear and real. It does this by making actual under the hand what the mind would otherwise conceive but dimly and uncertainly. For vague and cloudy ideas it substitutes ideas that are definite and distinct. It is the uncompromising foe of that mixing up of things which George Eliot calls the great Bad. The clearness and force which are thus acquired are the chief factors in the success of even the manual laborer, for skillful handcraft requires no mean order of intelligence. A young carpenter in a letter written to Mr. Gladstone in 1875 puts it in this way: "I can say that the best work is invariably given to the man who is able to keep up a constant communication between his brains and his hands, not merely passive in character, but active, concentrated, and almost unintermittent. His eye, his brain must be constantly acquainted with some new design, and he must be able to avail himself of whatever mechanical resources may suggest themselves to his mind." Both the good of society, therefore, and the good of the individual would be promoted by the rapid development of the technical departments of the University. The extent of this development should be limited only by the means that we can command for the purpose.

The near approach of the Ohio Centennial Exposition makes it important to consider at this meeting of the board what part the University shall take in that event. It is certainly desirable that the various departments of the institution should be well represented. As it is probable that the grounds selected for the exposition will be overcrowded, and as the University is so near, it would be convenient as well as appropriate, that the exhibit of the department of science and education should take place at the University. We are greatly in need of a building containing ample space to be used as a drill hall and, at commencement and other important occasions, as an assembly hall. It would serve also as a gymnasium. If such a building should be erected during the next season, it would accommodate the educational exhibit of the centennial. But whatever may be decided as to the place and manner of our exhibit, some adequate provision should be made for it at the present time or in the near future.

The reports from the heads of the various departments of the University present an encouraging view of the character, extent and recent growth of our work, and a view, not discouraging as I regard it, of its immediate and, in some cases, imperative wants.

THE TECHNICAL DEPARTMENTS.

1. Agriculture. The studies in this department present a wide range of useful and practical instruction, while the farm, the gardens, and the orchard afford excellent opportunities for observation and practice.

It may be well to inquire whether the farm can not be made to subserve in a still greater degree than heretofore the ends of the University. In the first place, may not a greater range of experiments be carried on? I would include a larger number and variety of experiments in agriculture and horticulture, experiments in the breeding and rearing of stock, experiments in dairying, and perhaps others. If the last were undertaken, the dairy would have to be carried on, in part at least, for other than commercial ends. It would be necessary also to incur the expense of a dairy house. But the experiments would have great interest, and might prove to be of great value, to this large and important industry.

In the second place, may not the farm be made to subserve more directly and effectively the purposes of instruction? It might be a laboratory of the agricultural and horticultural departments. To some extent it is so already. If it should be made so to a still greater extent, the students would derive decided advantages. Two such advantages are very obvious: first, their farm work might be so directed as to illustrate and give reality to the teaching of the class-room; and secondly, it would keep up the habit and the love of farm labor.

The suggestion to require outdoor labor of the agricultural students, and the previous suggestion to extend the work of experimentation, support each other. The required labor, being a part of the student's course of instruction, would not be paid for; and thus a considerable amount of labor would be available free of cost. The extra labor of students should of course receive compensation.

2. Agricultural Chemistry. The development of this comparatively new department goes on satisfactorily. Of the twenty-one students now in its classes, three are doing the work of the second year. The professor in charge has contributed a material part to the work of the state experiment station, the food and dairy commission, and the city board of health.

3. Veterinary Medicine. This department was able, with its improved facilities and the increased number of patients at the clinic, to accomplish even better results than before. The first graduate received the degree of D. V. M. at the last commencement. The number of students remains small, which seems to indicate that the public does not

yet appreciate the importance of having thoroughly trained veterinarians.

4. Civil Engineering. The piece of actual work recently done by one of the classes of this department in the survey of a piece of railroad line entering the city, was creditable to the department and to the students, engaged in it. There has been a steady improvement in the equipment of the department, but all its wants are not yet supplied. The models asked for and an instrument for the more accurate measurement of angles should be provided when the means can be spared.

5. Mechanical Engineering. No part of the university calls forth more favorable comment than the mechanical laboratory. It interests and impresses the visitor by its obvious usefulness and its adaptation to its purpose. It furnishes that kind of industrial education to which the public mind has of late been specially directed, the kind which will contribute more than anything else, save an increase of general intelligence and morality, to solve the grave industrial problems of the time. Manufacturers realize the necessity of more scientific methods and more highly trained skill. They see that inventive power, precision, superiority of finish, and economy of production are indispensable to meet the pressure of increasing competition.

The enlargement of the department should, therefore, in my judgment, engage the attention of the board at an early day. As far as it goes the present equipment is excellent, and the recent change in the course of study, by which advanced instruction is given in the laboratory, will add much to its value to the student. But this form of instruction is of necessity confined almost to manipulation. The student learns to perform the processes of the shop, but he has little, if any, training in the construction of actual machinery.

Such an extension as I have suggested would involve the appointment of a foreman, who should be both a workman of experience and skill and a competent instructor. It would involve also the continuance of work during the summer. At that time the students could be employed without interruption by the demands of other classes or of general college duty. They could also be employed in the construction of articles needed in the various departments of the University, or of machines for the general market.

The testing-machine has proved inadequate to the demands on it, and I join in the request that as soon as convenient one of greater capacity be purchased.

6. Mining Engineering. This department represents one of the most prominent of Ohio industries, and has recently attracted more attention than before from those who are interested in mining. At a

meeting of the Ohio Institute of Mining Engineers held in Ironton, June 28, 1887, a committee was appointed to ascertain the wants of the department, and to co-operate in securing such legislation as may be necessary to place it in the condition which, from its importance, it deserves. It is asserted by those familiar with the subject, that the waste at our mines and furnaces from the absence of scientific methods is enormous. In our own state this is a matter of great economical importance. The production of coal in Ohio last year was 8,435,211 tons, and the number of men employed at the mines, 20,407. Of iron ore the production was 344,484 tons. Within the year seventeen new mining companies were incorporated, with an authorized capital stock of \$4,784,800.

Recognizing the claims of this branch of industry, the legislature, by an act passed 7th May, 1877, established the department of mining and metallurgy at the University; and by an act passed 1st May, 1878, made it the duty of the board of trustees "to provide for the teaching of such branches of learning as are related to mines and mining engineering." We may hope, therefore, that the present movement to secure a further development of this feature of the University will meet with encouragement and success.

The value of the instruction would be greatly increased by a few weeks spent at the mines annually during the summer. The class should go in a body under the direction of the professor of mining engineering, and make actual observation day by day of the various operations. Notes should be taken on the spot and submitted to the frequent inspection of the professor. A month or two spent in this way would give an actual knowledge of mining machinery and operations which it is impossible to impart at the University.

7. Pharmacy. The pharmaceutical cabinet has continued to grow by the generous donations of various wholesale druggists, and is a useful adjunct to the department. The good quality of the work done is evinced by the success of our students at the examinations by the state board of pharmacy.

In framing the course of study it has been found necessary to create special classes in materia medica, microscopy, botany and toxicology, besides those in pharmacy proper. This has imposed additional work on the other departments, some of which were already crowded.

A still more serious matter, under the present financial circumstances of the University, is the unexpected expense of the department. The salary of the instructor in pharmacy, small as it is, was not fully allowed for in the beginning; and the need of a separate laboratory was not anticipated. Till now the laboratory of the department of agricul-

tural chemistry has been used by the students in pharmacy; but next term the students in agricultural chemistry will need all, except perhaps two or three, of the desks. As the teacher of pharmacy says in his report, "the matter of providing working accommodations is something which needs immediate attention."

8. Drawing. The work here has been faithfully done, but under some disadvantages. There is need of additional appliances which a small sum will supply. I would recommend an appropriation sufficient to provide the things asked for.

9. Military Science and Tactics. The battalion is larger the present term than ever before in the history of the University, and is admirably sustained. I ask your favorable consideration of the suggestion by the commandant that commissions and warrants be issued to the officers. The action of the board of trustees at the meeting held last June requesting again that the scheme of work in the University be so arranged, if possible, as to admit the sophomores to the battalion, was felt to be almost mandatory. Another attempt was accordingly made and the result has finally been accomplished. But it has been done at the sacrifice of other important interests. Students are excluded from elective studies that would otherwise be open to them, and extra work is imposed where the amount was already large, not to say excessive.

GENERAL SCIENCE.

1. Mathematics and Astronomy. The intimate dependence of several other departments upon this one has made the change in it already mentioned a matter of concern. We have reason to believe, however, that the former high standard of work will be maintained and that students will pass to other studies involving mathematical knowledge with an adequate training.

A working observatory is still a *desideratum*. Six thousand dollars invested to supply it would add immense value to the instruction in astronomy.

2. Physics. The physical laboratory has been augmented by the purchase of some choice pieces of apparatus, notably a standard resistance coil, a cathetometer, and a magnetometer. The remaining want which takes precedence of every other in this department is that of an electric light plant. The prominence now given to the subject by the rapid development of the applications of electricity, the desire for instruction in the subject, and the demand for instructed men, make a strong plea for the supply of the means for thorough practical work at

the University. I hope that we shall not be obliged to wait long for what is so needful.

But the department will never be placed on the footing that it should occupy until it has an ample and completely furnished building; and I do not know how any friend of science or of the University could confer a greater benefit on either than by rearing here such an honorable and enduring monument.

3. General Chemistry. The collections and conveniences of this department have improved year by year till its working equipment is perhaps more nearly complete than that of any other department of the University. In books and collections, however, there is still indefinite room for expansion.

4. Botany and Horticulture. A part of the work of this department is technical, but since all of the theoretical instruction in the subjects that belong to it is given here, I include it under general science.

The range of work is wide and the duties of the professor in charge, especially during the spring term, are onerous. The practical character of the instruction and the methods recommended are worthy of a cordial indorsement.

The new propagating house will meet a need that has been felt for some years. The other needs to which attention is directed in the report of the department, should be supplied as funds can be spared. The reasons for the establishment of a botanic garden are no less numerous or strong now than they were last year. Such a garden would be highly useful, not only to the University, but to the public.

5. Zoology and Comparative Anatomy. The necessity for additional appliances in this department has grown still stronger with the year. You have twice responded to the request of the professor in charge by appealing to the legislature for an appropriation. But nothing is yet done. I trust that you will place this first on your list of appropriations for department supplies, and that the urgency of the case may be made so clear to the incoming legislature that an adequate sum will be allowed.

6. Geology. The growing size and value of the museum give yearly increasing force to the plea for a fire-proof building in which to preserve it. The request for a small appropriation with which to employ an advanced student in geology to have charge of the museum, and show proper attention to visitors, is commended to your consideration. It can the more readily be granted for the reason that a considerable part of the salary is saved during the absence of the head of the department. A continuance is asked of the arrangement by which he has been absent during the spring term of the last three years. We are reluctant to lose his presence and his services for nearly a third of the

year; but his earnest desire and the value of his labors elsewhere are strong reasons why the request should be allowed.

LANGUAGE AND LITERATURE, HISTORY AND POLITICAL SCIENCE, AND
PHILOSOPHY.

1. English Language and Literature. The recent erection of this into a distinct department is another step in the steady development that has characterized the University from the beginning. What was at first one department is now divided into three, English, French, German; and besides this, two others, History and Political Science, and Philosophy, which were introduced as branches of this department, have been made independent. The high rank of these subjects merits all that has been done, and of none of them is this more true than the English.

I hope that the request presented by the head of the department for the purchase of books can be met from the library fund.

2. German Language and Literature. The work here has been enlarged to such an extent that it is in some respects quite heavy. I have already mentioned one great disadvantage of the present arrangement of the classes in German—a disadvantage so great that it ought in some way to be removed.

3. French Language and Literature. The separation of the German from this department has left the instructor a much more reasonable amount of work to perform. This has rendered possible a division of the sophomore class into two sections, the students in the course in philosophy pursuing literary French, while those in the course in science pursue scientific French. French is now offered also as an elective in the junior and senior years of the course in arts.

4. Latin Language and Literature. It was expected that the requirement of a year of Latin for admission to the preparatory course would diminish the entering class; but, although several applicants were unable to enter on account of this requirement, the class has exceeded its usual number. The new rule went into effect in September, 1886. In 1885 the first preparatory class in Latin numbered twenty-six, and the second thirty-one. In 1886 the first preparatory class numbered twenty-five, and the second thirty-two. In 1887 the first preparatory class numbers thirty-one, and the second twenty-six. We may infer that if the standard had not been raised there would have been a considerable increase in these classes. In the German classes, to which admission is obtained as before, without previous knowledge of the language, the increase has been marked. In 1885 the first preparatory class numbered forty-one, and the second twelve. In 1886 the first pre-

paratory class numbered sixty, and the second twenty. In 1887 the first preparatory class numbered sixty-three, and the second twenty.

5. Greek Language and Literature. The Greek language has a place in but one of the nine courses of study that lead to degrees. The classes in it are not large, but the students who choose this course are usually of those who remain till they have taken their degree. Hence they constitute a large proportion of the graduating classes. In 1884 there were thirteen graduates, five of whom received the degree of bachelor of arts. In 1885 there were sixteen graduates, four of whom received this degree. In 1886 there were eighteen graduates, six of whom received it. In 1887 there were twenty-five graduates, eight of whom received it.

Yet the departments of Greek and Latin have received but little aid. While other departments have been fostered, these have simply been permitted. The total expenditure for books and other supplies for both departments since the origin of the University must be less than a thousand dollars. They draw almost nothing, therefore, from the general resources. On the other hand, they create an opportunity which is eagerly sought by many students, and they spread a wholesome liberalizing influence throughout the university.

Your attention is called to the united request of the professors of Latin and Greek for the means to procure maps, plans, photographs, casts and other means of illustration. The sum asked for is small, and the object sought is very desirable.

6. History and Political Science. The popularity of this department is shown by the number of students electing work in it. The prominence into which historical and economical subjects have been rapidly growing has given a strong impulse to the study of them in the leading colleges. As a preparation for the rights and duties of free citizenship, a college can furnish no more suitable instruction.

The amount of time allowed to history in one or two courses is happily sufficient to enable the most advanced class to carry on some work in original research. As a means of training, this is highly valuable; and the seminary method, which is employed in this class, is the best that has been devised for the purpose.

7. Philosophy. It is to be regretted that as yet the work in this department is altogether elementary. No student receives any instruction in it till he reaches the junior year, and then he can obtain it but three hours a week during the two remaining years. In that limited time he pursues four distinct studies, psychology and logic each two terms, and ethics and the history of philosophy each one term. Advanced courses in psychology and ethics, a course in metaphysics, and a course in recent philosophy ought to be introduced; and we can lay no claim

to completeness in this kind of study until this much at least has been done. I need hardly say, however, that as long as the chair in philosophy is joined with the presidency of the University, it will be impossible to cover so wide a field. It is a field which should command the whole time and energy of the instructor.

Two desirable changes have recently been made in the course, by one of which two terms are given to logic, instead of one, and by the other ethics is placed as a required study in all of the general courses.

GENERAL.

1. The Library. Your attention is asked to the report of the librarian. The quality of our library is exceptionally good. The books have been carefully selected and are the best in their several departments. But we still lament their fewness and the slowness with which their number increases. The situation is strongly presented in the statement of the librarian that "at least five times the sum appropriated last year should be expended for the next five years in order to *lay a proper foundation* for a first class college library."

It is important that some one should be employed who can give undivided attention and service to the library. The librarian has charge of one of the departments of instruction; besides which he is secretary of the school of arts and philosophy. It would be unreasonable therefore to ask of him more than a careful supervision of the library. This he gives, and more, with care, intelligence and faithfulness. The sum at present allowed for an assistant is too small to pay for the entire time of any competent person. The service was never better than it is now, but, being performed by a student, it is necessarily limited.

2. Grounds. The report of the superintendent of the grounds directs attention to several important matters. What he says of the advantages of beautiful surroundings is certainly true. It is also true that our own are gradually improving in their appearance. If, however, we wish to keep a smooth and handsome lawn, one of the requisites will be the use of a horse lawn-mower.

The lighting of the grounds is a subject worthy of your consideration. As a police measure it would have its value, though we are fortunate in having little occasion for police regulations. On the occasion of public entertainments given in the evenings, it would be convenient to our visitors and creditable to the University, if those who attend were not compelled to grope their way in darkness to the building and back again to the street. The recent improvement of the gas-works would make the addition of this desirable feature to our grounds comparatively inexpensive; and if an electric light plant

should be procured, it would afford the means of a brighter and more general illumination.

The new pavement that has been laid on High street in front of the university grounds was much needed and is much appreciated. Besides the convenience it affords, it improves the appearance of the street. In this connection I would ask you to consider the improvement of the main entrance to the grounds. The gateway should be enlarged and beautified and suitable lights should be placed on either side.

I would recall to your notice also a subject which has already received some attention at your hands. I refer to the preparation of a general plan of the grounds for future guidance in the location of buildings and the making of other improvements.

The appropriation of \$2,000, asked for by the superintendent of grounds, will scarcely afford the means for what should be done within the coming year.

Such is a survey of the work in which the University is engaged. Such, too, are some of its leading and more pressing wants; and when we look from what has been done to what remains to be done before our ideal can be attained, the necessities seem to be very great.

The general policy of the University should now be directed to the proper development of the existing departments. The aim should be to bring them all to the highest state of efficiency. Some other departments are still necessary to complete the sphere of university work; but no attempt should be made to create them until resources are available for that particular purpose. Thoroughness in what has already been undertaken will be more satisfactory to those who conduct the work, more useful to students, and more honorable to the institution.

What should be kept steadily in view is the soundness and vigor of the University in every part. A strong pervading energy, a high plane of sentiment, an earnest intellectual and moral tone, are the best of all conditions for educational work. They are also the best means of gaining the resources for expansion. Whosoever improveth what he hath to him shall be given.

In preparing our requests to the legislature at the coming session, I would recommend the selection of a few objects which are most necessary, most likely to meet with favor, and on which we may concentrate our efforts. Leaving others for future consideration, I desire to speak particularly of one. The one eminent object that we should seek is one-twentieth of a mill on the grand duplicate of the State. This method of providing for the growth and maintenance of the University commends itself; so far as I have learned, to all of its friends. If once

adopted and adhered to, it will end our annual concern and our annual appeal. It will end the hand-to-mouth policy now forced on the institution. It will justify permanent plans for its future work, and infuse confidence and steadiness into all its operations.

And what do we ask? But one-twentieth of one-thousandth of a dollar. Assuming that the population of Ohio has increased during the present decade at the same rate that it did during the last one, the amount named is an average of two and one-seventh cents from each individual; whereas, taking the tax duplicate to represent two-thirds of the actual wealth of the state, the accumulated property in the hands of each individual, man, woman and child, reaches an average of \$682.78.

We have on former occasions pointed to the example of other states. I venture to do so once more. Minnesota was organized as a territory less than forty years ago, and was admitted as a state less than thirty years ago. At the time of the last general census her population and wealth were about one-fourth the population and wealth of Ohio. Yet her state university has a productive fund of \$600,000, more than one-tenth greater than that of the Ohio State University; and it has a library of twenty thousand volumes, while that of the Ohio State University barely touches eight thousand volumes.

But while the State should do a liberal part in building up here a university of the first rank, are there not other sources to which we may justly look for aid in this great enterprise? For its growth the first necessity is money, and it must be obtained in large sums. Buildings are needed; appliances are needed; books are needed; men of ability and ripe scholarship are needed. But to secure these or any of them money is an indispensable requisite. Has not the time come when it can be obtained? And should we not unite—trustees, faculty, alumni, students, friends—to awaken public interest in the welfare of the University?

Why may we not look for donations from private wealth? Surely there are men of large means in Ohio, whose generosity and public spirit should lead them to devise and execute liberal things for the University. With wealth around her flowing so profusely in other channels, why should she, conspicuous above almost every other liberal enterprise, be allowed to suffer for lack of means? Great educational foundations are rising in every part of the country. The magnificent gift of Mr. Clark at Worcester, Mass., and that of Mr. Stanford in California, are among the largest ever made to education by a single individual. Some of the greatest foundations are rapidly increasing. In the year 1884-85 Harvard received gifts amounting to \$146,000; Yale,

\$111,000; Syracuse, \$122,000; Williams, \$150,000; Vanderbilt, \$210,000; the University of Virginia, \$490,000, and Columbia, \$542,000. The gifts to the colleges, universities and schools of science in the United States, made during that year, reached the grand aggregate of \$5,500,000. The sums given in Ohio during that year, for the same objects, made a total of nearly \$350,000. Large benefactions have also been made here and elsewhere for other objects. They all bespeak a noble spirit, and have been devoted to noble ends. But I wish that we might reach the ears and hearts of the men and women of wealth in Ohio, and make plain to them what an opportunity awaits them here? Where would benevolence yield more abundant fruit? Where would it be more strongly reinforced?

Wealthy men in the state of New York have comprehended the advantages of a similar situation, and have poured gifts upon Cornell University with a lavish hand. More than a million and a half of dollars have been given from private sources, in donations ranging from \$2,500 up to more than \$650,000. One has built a conservatory; another a chapel and a college building; another a building for the library. One has endowed a lectureship, and another has, by successive donations, provided buildings, machinery, models and endowment for the mechanical department. What wonder is it that the present freshman class of that University numbers four hundred students, the largest class ever received by an American college?

While universities and colleges, east and west and south are thus advancing, shall our own stand still? Shall the university founded and governed by this great central state, among the richest and most populous in the Union, continue to suffer restraint in its work and in its growth, while the universities of other states make a rapid and almost unhindered progress?

I congratulate you on the prosperity of the past, and I join you in strong and fervent hope for the future. May the year on which we have now entered mark the opening of a yet higher and more prosperous career for the institution under your care.

Respectfully submitted,

WILLIAM H. SCOTT.

Ohio State University, November 22, 1887.

DEPARTMENT REPORTS.

MATHEMATICS AND ASTRONOMY.

President W. H. Scott:

DEAR SIR: I have the honor to submit the following report upon the department of mathematics and astronomy, for the college year ending June, 1887.

The number of students enrolled in the department was as follows:

Fall Term.

First preparatory—Algebra	64
Second preparatory—Geometry	57
Freshman—Trigonometry	34
Sophomore—Analytic Geometry	19
Junior—Astronomy	14
Total.....	188

Winter Term.

First preparatory—Algebra.....	62
Second preparatory—Geometry	53
Freshman—Higher Algebra	41
Sophomore—Calculus.....	16
Junior—Geodesy	6
Junior—Potential Function	2
Total	180

Spring Term.

Second preparatory—Trigonometry	50
Freshman—Analytic Geometry	39
Sophomore—Calculus	14
Junior—Astronomy	11
Total.....	114

Whole number of enrollments	482
Number of students (no name counted twice).....	196

During the present collegiate year considerable changes have been made in the course of mathematical study offered to students. The courses in spherical and practical astronomy, geodesy, and the potential function were given for the first time

in this University. The recent revision of the curriculum has also rendered it possible to open, for the first time, as an elective to students in the arts and philosophy courses, the mathematics of the winter and spring terms of the freshman year. The work of these terms has been so modified as to afford to those students desiring to pursue the study of physics in their sophomore year, a better preparation in mathematics than has hitherto been practicable. Students taking mathematics in their sophomore year are, by the same change, enabled to commence their calculus at the beginning of the fall term instead of the winter term, as heretofore, and thus gain additional time for this very important branch of mathematics.

Owing to changes in the curriculum by which descriptive astronomy is transferred from the junior to the senior year, I have had no class in that subject during the present year. Notwithstanding this loss of one class, a comparison of this report with my preceding one will show a very gratifying increase in the number of students pursuing work in this department.

Very respectfully,

GEORGE C. COMSTOCK,
Professor of Mathematics and Astronomy.

Ohio State University, June, 1887.

PHYSICS.

President W. H. Scott:

DEAR SIR: The following report of the department of physics, for the year ending June, 1887, is respectfully submitted.

The work of instruction was divided as heretofore, in three grades. The second preparatory class, continuing through the second and third terms, numbered seventy-two students. The sophomore class numbered thirty-three and the laboratory sixteen.

The appropriation of a thousand dollars placed at our disposal enabled us to procure two very fine pieces of apparatus. One is a cathetometer, with a standard meter bar for use with it, made by the Geneva Society, of Switzerland. The other is a magnetometer, of the Kew pattern, from Elliott Brothers, London. A standard resistance coil was also purchased. The coil was compared with the British Association Unit, and has the certificate of Prof. Glazebrook, secretary of the standard committee, showing the result of the comparison. The addition of such instruments as these has resulted in increased interest in our laboratory work, and improved the quality of the work done. The disadvantages we work under in our present rooms are increasing, as the number of students engaged in the laboratory increases, and as we attempt more accurate work. "It is now conceded that the most valuable training in physics is that obtained in the laboratory, and the smaller colleges are following the example set by the leading institutions in this and other countries in erecting laboratories especially adapted to such work. We are obliged to use our lecture rooms as rooms for laboratory work also, an arrangement which is for several reasons undesirable. Many students are obliged to work near each other, and are unable to give their work the close attention so necessary to the attainment of good results. Unavoidable noises distract them, and vibrating floors and walls continually disturb the adjustment of their instruments, making many exercises difficult, and some impossible. The best rooms we have are in the basement, and are poorly lighted, and worse in ventilation, and there is nothing better to be had in any of the university buildings. A suitable building is a necessity." I wish to emphasize these words from my last report to you, and to express the hope that this pressing need may receive the early attention of yourself and the board of trustees.

I wish also to ask your attention to another matter. You are aware that there is an increasing demand among our students and from without, for work in applied electricity. This demand has been met so far as our equipment will enable us to do it. Electrical engineering is rapidly becoming a profession, and must soon take its place beside mechanical and civil and mining engineering in the work of technical schools. The rapid extension of electric lighting, electric railways, the use of electric motors in manufacturing, etc., calls for young men thoroughly trained both in the science and in the art of electricity. This University ought to supply the demand for Ohio, at least, but we cannot give young men a training which, when put to the test of practical use, will be satisfactory either to themselves or to their employers, until special provision is made. Sound theoretical knowledge is necessary to the highest success, and can be given with but little apparatus, but theory alone is not sufficient. It must be supplemented by thorough practical knowledge, before the student can enter on the practical life for which he has been fitting himself. I ask that an appropriation be made for this purpose. We need an equipment with which practical instruction can be given in the use of such electric machinery as is now used commercially. This will comprise a steam engine, at least four dynamo machines of commercial size, an electric motor, dynamometers, arc and incandescent lamps, and the necessary line wires, insulators, switches, etc. etc. The machinery will need a small building, which will not be expensive. I respectfully urge that an earnest effort be made to secure the necessary means from the next legislature.

Very respectfully,

BENJ. F. THOMAS,
Professor of Physics.

Ohio State University, Oct. 4, 1887.

GENERAL CHEMISTRY.

William H. Scott, President:

DEAR SIR: I have the honor to present herewith this the fifteenth annual report of the department of general and applied chemistry.

The total number of students enrolled in my classes last year was 99. Of these twenty-seven were in the analytical laboratories, seventy-two in the class in inorganic chemistry, and forty-eight in that of organic chemistry. Besides these classes, others were maintained most of the year in stoichiometry (a class of 7), and in the analyses of foods and of poisons (the pharmacy class of 3). These two classes were both taught by my assistant, Dr. O'Brine.

In addition to this work, two of our seniors undertook an investigation into the character of the water furnished by the city of Columbus, with special reference to the variation, if any, of the so-called organic contaminations. A room was specially fitted up for their use in the basement, and in this they tested the city water each week from January until June. The result of their labors is embodied in their joint thesis, and is a contribution to sanitary science. It is desirable that this work be repeated in order that sufficient facts may be accumulated to show the nature and character of the differences they observed, and possibly to ascertain its cause and cure. Their report shows, incidentally, that the water is, in general, exceedingly good, and for some weeks they found only traces or absolutely nothing of organic matter in the water.

But little progress was made last year in adding to our collections in applied chemistry. A suite of specimens of raw rubber was obtained for us through the Columbus Rubber Co., and another suite of lubricating oils through one of our own students.

As regards the apparatus of the department, I have only to say that it is, in general, in good condition. I would like to purchase a few hundred dollars worth of the new forms for lecture experiments, but am admonished that the necessary expenses of the department are large. One necessary expense is books, and although we have a small working reference library, we need a much larger one. We need sets of the chemical journals, English, German and French, and need to keep them up. For a complete set of one of these, Liebig's Annalen, I have asked the board repeatedly. It has been a worry to me of late years that the students are asking me for books on the history of chemistry and of chemical theory, which I cannot give them. The number of such books printed in English is not large, and of course we should have as many as we can get. My list would include with profit out-of-the-way books on alchemy and the "black art." We need also a few special treatises on the applications of chemistry to the arts, such as the new Muspratt, or the new Bolley Technological Chemistry. That our little library has been well thumbed, the bindings will show. As a matter of course it has been kept almost entirely as a reference library; only a few dozen of the books have been loaned out for a week at a time.

Very truly yours,

SIDNEY A. NORTON.

GEOLOGY.

The number of students enrolled in the several classes of the department during the year was 88. These students were distributed among the classes named below as follows:

General geology, junior class, 2 terms.....	{ 10
Economic geology, junior class, 1 term.....	10
Paleontology, senior class, 2 terms	2
Physical geography, 1st preparatory class, section A, 1 term.....	32
“ “ “ “ B, 1 term.....	34

From a cause named in the last report, viz., a change in the programme, making geology elective in the arts and philosophy courses, and deferring the election to the senior year, the number in my classes in general geology last year was somewhat

smaller than usual. This year, however, the election is possible to the present senior class, and I find the usual number in my recitation rooms.

As I have done for several years, with your consent and that of the board of trustees, I left the University at the end of the last winter term to undertake special geological work for the spring and summer, returning to my professional duties at the opening of the fall term in September. This arrangement I desire to continue for still another year, if possible.

I have added a considerable amount of new material to the museum during the last year. The most important additions are additional samples of drillings from the deep wells that are being sunk in all parts of the state. This collection has a unique interest and value. It is not at all probable that the opportunities for duplicating it will ever occur.

The work of cataloguing the specimens in the museum has been carried forward, and more than 6,000 titles have been recorded, many of them standing for a dozen or a score of duplicates.

In regard to a new building for the geological museum, I have no new pleas to make, and it seems unnecessary to repeat those already urged. The necessity for better provision for the valuable material already accumulated, and for the large additions that could easily be secured, if a proper place for their preservation could be promised, still continues, and gains rather than losses in urgency.

If such provision can be made, a museum that will be creditable to the University and to the state can be guaranteed.

The museum in its present state requires more time and labor than I am able to give to it. It is a source of interest and instruction to many persons who visit the University. I should be very glad if a small appropriation could be made to secure the services of one or more of my advanced students, who could have charge of the room, and answer the questions of visitors during four or five hours each day.

Very respectfully,

EDWARD ORTON,
Professor of Geology.

Ohio State University, October 31, 1887.

BOTANY AND HORTICULTURE.

President W. H. Scott :

DEAR SIR: I have the honor to submit the following report of the department of botany and horticulture for the last academic year.

The whole number of students receiving instruction in this department during the year was 116.

The following statement presents the subjects taught and the number enrolled in each class:

Fall Term.

Economic and applied botany	10
Advanced structural botany (sophomores)	28
Vegetable histology (laboratory)	1—39

Winter Term.

Vegetable histology and physiology	6
Cryptogamic botany	21
Structural botany (special)	1—28

Spring Term.

Small fruit culture	9
Landscape gardening and floriculture ..	7
Advanced botany (gymnosperms, etc.)	19
Structural and systematic botany	70
Special botany (field work).....	3—108
Total enrollment in all classes	175
Number of different students.....	116

As heretofore the instruction given has been in the form of lectures, laboratory practice and field work.

The aim is to train as well as to teach. A large portion of the time spent in the class-room is given to the direct study of plants or their products. Text-books are used mainly for reference. This method develops the faculty of observation and trains each student to acquire knowledge readily and accurately for himself.

The work of the spring term was heavy and exacting. I was only able to carry it to a successful termination by the timely and valuable assistance of Mr. Moses Craig, a special student in this department.

In the main the students have been earnest and their enthusiasm made the work of instruction a pleasant task.

MATERIAL EQUIPMENT.

Regarding the general equipment of the department and its means of illustration, it may be said that in certain directions these are admirable, while in others they fall far below those of corresponding departments in other institutions.

The most urgent need in the way of equipment is now being met in the construction of a propagating house.

Up to this time plants for the use of the gardens and campus have been propagated in a very unsatisfactory manner in a series of unsightly hot-beds located on the slope just south of horticultural hall. These have just been replaced by a low, inexpensive propagating house, 60 feet in length by 25 feet in width, which, when completed, cannot fail to add much to the usefulness of the department.

What is still needed is two-fold. The first requisite is a generous provision of illustrative material, especially in the line of applied botany. The efficiency of the department, its attractiveness in the eyes of students, its standing before the public, can be greatly enhanced by the expenditure of sums that would appear insignificant if asked for by other departments of the University. This assistance is of a tangible sort and can be readily furnished. The other need, though less tangible, is no less important. It is the need of assistance in the way of properly preserving, labeling and arranging the material now in the museum.

Something has been done in this line during the past year, but lack of money and want of time on my part have made it impossible to do much. The immense amount of labor required to make a really instructive botanical museum is not well understood. An herbarium is as necessary for the student of botany as a herd-book or register is to a breeder of thoroughbred stock.

We have a large amount of valuable material in the way of dried specimens. To properly mount and arrange it will require both time and money, neither of which have been at my command during the past year.

As far as possible the specimens have been kept in a good state of preservation.

SUGGESTIONS FOR THE INCREASED EFFICIENCY OF THE DEPARTMENT.

The number of students attending my courses of study depends, to a very considerable extent, upon the success of other departments of the university.

Whatever tends to increase the number of students in agriculture is a gain for the department of botany and horticulture. I am, therefore, heartily in sympathy with the plan of offering "free scholarships" in the two years' course in agriculture.

If this offer is thoroughly advertised, and the appointments based upon a free and fair competition, I believe the advantages offered will be very generally improved by those who expect to be farmers and gardeners.

Inasmuch as few farmers' sons can afford to spend five or even four years in college, the new arrangement of the courses of study by which instruction in agriculture and horticulture is placed earlier in the course is a good one. What is now needed in the agricultural courses is more *field* or laboratory work in connection with the instruction of the class-room.

I am more and more convinced that unless a student understands something of the *art*—the practice—of agriculture and horticulture, it is well-nigh impossible for him to appreciate and clearly comprehend the science upon which the art is based. The art cannot be acquired in the class-room, and I most respectfully urge that the superintendents of the farm and garden, respectively, be authorized to give such practical instruction to the students of the agricultural and horticultural classes as will prepare them for the teachings of the class-room.

During the past year the classes in horticulture have spent a considerable portion of the time in illustrative labor under my own supervision. This has included such operations as grafting, pruning, transplanting, etc. I have been more than pleased with the enthusiasm that the students have displayed in all work that is strictly educational. This fact indicates that there is a demand for instruction along this line of manual training, and shows that no effort should be spared to make prominent all features of illustrative labor on the farm and in the gardens.

A BOTANIC GARDEN AND ARBORETUM.

A year ago the State Horticultural Society adopted the following resolution :

Resolved, That the establishment and maintenance at the Ohio State University of a well-equipped garden and arboretum, for the illustration of systematic and economic botany and forestry, would be of great benefit to the people of the state, especially to teachers of our public schools, to farmers, nurserymen, fruit-growers, florists, and to medical students. In such establishment the Ohio State Horticultural Society will take the deepest interest, and it desires respectfully, but earnestly, to commend the subject to the trustees of the State University and to the general assembly.

I trust that you will again urge the trustees to ask the legislature for an appropriation of \$5,000, for the purpose set forth in the above resolution.

Next year Ohio is to celebrate her centennial. There is a general desire on the part of the citizens of the state to make the year a memorable one. What more useful, appropriate, or lasting memorial could be named than the establishment of an arboretum and botanic garden? It is needed to test the climatic adaptations and economic value of plants of all kinds. It is needed for the illustration and encouragement of practical forestry. It would subserve many other ends of usefulness. I beg for this subject your earnest consideration.

SPECIAL NEEDS OF THE DEPARTMENT.

The following is a summary of the special needs of the department:

1. For museum	\$500 00
2. For laboratory equipment	150 00
3. Plants for green-house.....	150 00
4. Models, maps and charts for class-room.....	100 00
5. Horticultural equipment—tools for student labor in garden.....	100 00
Total.....	\$1,000 00

Very respectfully,

WILLIAM R. LAZENBY,
Professor of Botany and Horticulture.

Ohio State University, October 14, 1887.

AGRICULTURE.

President W. H. Scott:

DEAR SIR: There are three classes under the charge of the professor of agriculture, each having a special line of work. By the first class, which numbers five, soils are examined, their origin, geological relations, composition, classification and special adaptations are studied. Also fertilizers, drainage, and other means of improvement, grasses, grain, crops, tillage, farm machinery, fences, farm buildings, etc. The time of the second class, numbering seven, is devoted to the study of the natural history, description, and special adaptations of the varieties of domestic animals, horse training, wool-growing, dairying, stock breeding, feeding and management. The third class, numbering eight, is occupied with the study of animal diseases, their nature, causes, symptoms, and especially the means for their prevention. Also remedial agents, principles of treatment, veterinary obstetrics, and surgical operations.

Agricultural instruction is arranged to accommodate as many as possible of the young farmers of the state. Two courses of study are offered—one a college course, requiring four years, and leading to a degree; this includes not only practical instruction, but embraces all the sciences which have relation with agriculture, such as geology, chemistry, botany, horticulture, comparative anatomy, physiology, veterinary medicine, physics, mechanics, geometry, surveying, etc. Such branches as may be expected to prepare the young farmer for the duties of citizenship are also included—history, rhetoric, constitutional law, political economy, etc. The other, or short agricultural course, occupies two years, and includes, in addition to practical agriculture, so much of chemistry, botany, horticulture, animal physiology and veterinary medicine as can be acquired in the time. The short course is adapted to the wants of students who are limited in time or means; it enables them to judge what studies are likely to be most useful, and to make a good beginning in the work of self-education.

Agricultural students, with all others at the University, have the benefit of literary or scientific training in the meetings of societies. The Kirtland society, which is composed chiefly of agricultural and veterinary students, meets weekly for addresses, essays, and discussions by the members.

The University farm of three hundred and thirty acres supplies labor with compensation to many students who desire in this way to defray a part of their expenses. It also affords the means of illustrating in a practical manner much of the instruction given.

To extend more rapidly the benefits of scientific training among the young farmers of the state, the trustees of the University have offered to every county

agricultural society in Ohio the privilege of sending one student to the short agricultural course, to whom all college charges will be remitted.

Yours respectfully,

N. S. TOWNSHEND.

ZOOLOGY AND COMPARATIVE ANATOMY.

Wm. H. Scott, President:

DEAR SIR: I have the honor to submit to you my thirteenth annual report.

The enrollment in my various classes for the year recently closed was as follows: Sophomore physiology, thirty-three; sophomore anatomy, seventeen; junior histology, ten; senior microscopy (pharmacy course), three; the total enrollment was sixty-three, of whom twenty-one were enrolled in more than one class.

The year just closed was the first in which, in accordance with previous action of the faculty, laboratory work in anatomy and physiology was made part of the required work of students (except engineers) attending the lectures upon these subjects. As predicted in my last report, the appliances for this work were altogether inadequate. The number of students of whom this work is required is larger this term than it was last year, and I enter upon the work of the year, knowing that it cannot be performed in the manner that the interests of the students demand. I regret very deeply that the failure of the legislature to respond to the request of the trustees, in behalf of this department makes this condition of things possible, and I trust that their request will be repeated this winter with even greater urgency.

Let me recall your attention to the fact that I am not now asking for costly pieces of apparatus suited for original research (much as I desire some things of the sort for the use of advanced students in my laboratory), but for a large number of simpler appliances for elementary work in such extensive duplicate, that sections of from eight to twelve students may make good use of their time, instead of waiting upon each other (as is now frequently necessary) for the use of single preparations or pieces of apparatus; a procedure which causes serious waste of time, a decrease of interest in the work, and, on the part of earnest students, a diminution of respect for it. I am sure that if the trustees of the university fully understand the urgent need of this department they will do their utmost to provide for it.

All of which is respectfully submitted.

ALBERT H. TUTTLE, *Professor.*

Ohio State University, October 1, 1887.

CIVIL ENGINEERING.

President W. H. Scott:

DEAR SIR: I have the honor to submit the following report of the department of civil engineering, for the year ending June, 1887.

The number of students enrolled in the various classes during the year was as follows:

Fall Term, 1886.

Seniors, civil engineering	7
“ bridge designing.....	4
Juniors, topographical surveying	7
Sophomores, land surveying.....	14
Short agricultural course, field measurements	17

Winter Term, 1887.

Seniors, shades, shadows and perspective	4
“ plans and specifications	5
Seniors and juniors, stereotomy	9
Sophomores, lettering and platting.....	10

Spring Term, 1887.

Seniors, sanitary engineering .	3
“ plans and specifications..	3
Juniors, bridge strains	7
Sophomores, railroad surveying	13
<hr/>	
Total enrollment	103
Total number of students (counting none more than once).....	44
Students in short agricultural course.....	17
“ mining engineering course	3
“ civil engineering “	24
<hr/>	
Total.....	44

At the end of the year 3 students received the degree of civil engineer.

The students have been very faithful and successful in the work of the past year.

During the spring term the class in railroad surveying was employed by the C., L. & N. W. Railway Co., to make a preliminary survey and estimate for a road several miles in length, around the northern and eastern part of the city. The work was rapidly and well done, to the entire satisfaction of the company.

The equipment of the department has been increased by the addition of several small surveying instruments, photographs, blue prints, drawings, etc., and a few models made by students. The transits were sent to the makers for a thorough cleaning and repairing. One of them was filled with stadia wires, so that students can now be trained in this method for surveying. A stadia rod has been made by students at the University.

Our outfit for all ordinary surveying is now fairly complete, but for the better class of work we have no instrument that will measure angles with sufficient accuracy. For this purpose we need very much a good transit or transit-theodolite. Such an one as will answer the needs of the department can be had for about \$650, and I hope that an appropriation for that purpose can be made.

We have tape measures that are accurate enough to use with such an instrument.

The want of models in stereotomy, and also of roof and bridge trusses is more and more felt, and I hope that there will be at least \$300 set aside for this purchase.

Very respectfully submitted.

C. N. BROWN,
Assistant Professor.

Ohio State University, October 4, 1887.

MECHANICAL ENGINEERING.

President W. H. Scott:

DEAR SIR: I respectfully present the following report for the department of mechanical engineering for the year ending June, 1887.

First Term—Students in analytical mechanics, 13. In mechanism, 5. In thermodynamics, 4. In mechanical laboratory, 13.

Second Term—Students in technical drawing, 6. In prime movers, 4. In mechanism, 4. In mechanical laboratory, 14.

Third Term—Students in strength of materials, 10. In mechanism, 4. In designing and drawing, 4. In millwork, 2. In technical drawing, 2. In mechanical laboratory, 10.

The new appliances procured two years ago have proved to be of excellent service to the department, as already considerable advanced work has been accomplished which was not possible before.

One of our present needs is a better testing machine, the present one having been twice broken in overloading it while attempting to finish testing some ordinary test pieces of stone and iron. Also, it has very often been found desirable to test specimens that the machine would not take in. A machine of greater capacity in both these respects is needed, and I would be glad of means for relieving this need. To procure the improved facilities would cost about \$800.

Very respectfully yours,

S. W. ROBINSON.

Ohio State University, October 4, 1887.

MINING AND METALLURGY.

President W. H. Scott:

DEAR SIR: I respectfully submit the following report of the work in the department of mining and metallurgy for the year ending June 22, 1887.

The number of students in the various classes under my instruction was as follows:

Fall Term—metallurgy, 8; plans and specifications, 3.

Winter Term—metallurgy, 5; mining engineering, 4; assaying, 3; mineralogy, 57; plans and specifications, 2.

Spring Term—ore-dressing, 5; metallurgy, 3; plans and thesis, 2.

The whole number of different students in the department during the year was sixty-nine.

There were two graduates in mining engineering.

The chemical work conducted in the laboratory of this department comprised numerous analyses of limestones, oil-wells, drillings and coals for the Ohio State Geological Survey. These have been partly published in the special reports of the state geologist, and will appear in the next volume (Vol. VI), of the state reports.

An unusually large number of samples of fertilizers has been analyzed, and the results published and distributed over this state in the regular crop reports of the State Board of Agriculture.

The demand for these reports on the part of the farmers is so great as to indicate a hearty appreciation of the value of the work.

This year the tabular statements of results of analysis have been supplemented by short articles by Professor Weber and myself on the use and application of fertilizers.

I would respectfully urge the growing importance of providing increased facilities in the mining department, representing as it does the second largest industry of the state. At a recent meeting of the Ohio Institute of Mining Engineers in Ironton, this subject was discussed at some length, and a committee of three members appointed to visit the University, and report to the institute the needs of the department, and what means could be adopted to assist the University in supplying them. I hope this may lead to a growing interest on the part of the mining portions of the state in the development of the department.

Respectfully submitted.

N. W. LORD,
Professor of Mining and Metallurgy.

FREEHAND AND MECHANICAL DRAWING.

W. H. Scott, President:

DEAR SIR: I respectfully submit the following report of the department of drawing, for the year ending June, 1887.

The number of students enrolled in the department, deducting those twice counted, was 120, distributed as follows:

First Term—Freehand drawing.....	23	
Projection “	24	
Special “	1	
	—	48
Second Term—Freehand drawing	18	
Descriptive geometry	19	
	—	37
Third Term—Freehand drawing.....	19	
Shades, shadows and perspective	19	
Special drawing.....	2	
	—	40
		—
		125

Owing to a recent change in the requirements of the different courses the number of students in the freehand drawing class was reduced.

All students of freshman standing were required to take freehand drawing, but now only those of sophomore standing in the bachelor of science course, it being an elective study in the sophomore year of the bachelor of arts and bachelor of philosophy courses.

Just here I would venture to offer the suggestion that freehand drawing be given a place in the freshman year of the engineering courses.

It is to be regretted that none of the needs mentioned in my last report have been received. This is unfortunate from the fact that what was there requested was absolutely necessary.

I call your attention to the present needs of the department, which I hope will be supplied in the near future.

1. A set of J. Schröder's descriptive geometry models to facilitate the work in projection drawing and descriptive geometry.

The cost of a set is about \$85.

2. To facilitate the work in freehand drawing, a few copies in finished work should be provided, illustrating figure, animal, flower, landscape, marine and ornament drawing. As the students advance they develop desires for a special style of work, and these the department should be able to meet. \$25 or \$30 would probably answer.

3. In the work of shading from models and plaster casts, the direction of light is an important factor in securing the best effects, and should be controlled; but with the present arrangement of windows this is impossible. They should be provided with shades of a neutral color which roll from the bottom upwards.

4. In order that the department be able to make a showing of its work, a small appropriation might be requested to frame and hang a portion of the students' work upon the walls of the room. It would add very much to the attractiveness of the room, and indicate the aim of the department.

Very respectfully,

J. N. BRADFORD.

Ohio State University, October 1, 1887.

VETERINARY MEDICINE.

President W. H. Scott:

SIR: Herewith I have the honor to submit to you my report for the past year. When the veterinary department was opened in the fall of 1885, the various branches of veterinary medicine could not at once be taught in the order in which they are laid down in the regular course. Some students, already advanced in other branches, entered the new department, and it was deemed advisable to allow them to take a somewhat irregular course, and to admit them to studies assigned to the senior year. So it happened that last year those branches which are assigned to the senior year, and have to be taught by me, were, with the exception of clinical instruction, and some minor branches, not given during the past year. This left me time to take a class in veterinary anatomy, a study assigned to the first, or, if the preparatory year is included, to the second year of the course. In this study I had a class of six students during the fall and winter terms, and of five in the spring term. Four horses, two mules, and one calf furnished the material for practical study of anatomy, and the majority of the members of the class diligently availed themselves of the opportunity thus offered, and did good and thorough work in the dissecting room. Besides the class in anatomy, I had a class of two students in helminthology in the fall term, and in the spring term a class of three veterinary and of two agricultural students in veterinary obstetrics, and another class of one veterinary and two other students in bacteriology (methods of bacteriological research).

The clinic, which was attended by six students in the fall and winter, and by five in the spring term, was, on the whole, much better patronized than the year before, and the number of patients presented for treatment at least double that of the preceding year. Besides that, the more advanced students had frequent opportunities to go with me to patients in my treatment at the premises of their owners.

An opportunity was also offered to the advanced students to become practically acquainted with the modern methods of bacteriological research, and of investigating the causes of infectious diseases. As veterinarian of the Ohio Agricultural Experiment Station, I conducted last fall and last winter a series of experiments for the purpose of establishing on a strictly scientific basis the identity of the microbe, which causes swine plague or so-called "hog cholera;" and every process was not only explained to the students, but also, where possible, performed under their observation, and with their assistance. This work, in particular, has borne good fruit. A senior student, Mr. Mark Francis, by this training, became enabled to undertake successfully as his thesis work an original investigation into the cause or causes of foot-rot in sheep. He not only succeeded in finding the cause, but also in demonstrating on a strictly scientific basis and beyond any doubt whatever, that a short-jointed aërobic bacillus, of great vitality, constitutes the true cause of that disease. He is the first who, to my knowledge, has found and described this bacillus, and demonstrated it to be the cause of foot-rot. His thesis was read before the American Society of Microscopists at its last meeting in Pittsburgh, Penn., September 1st, and not only met with high praise from the members of the society, but also from the medical and secular press. The St. Louis Medical and Surgical Journal, which is considered as good authority on microscopy, calls Dr. Francis' thesis in an editorial in its October number: "A paper of great value on the bacterial origin of foot-rot in sheep * * * marked by a thoroughness of research, and a neatness and beauty of experimentation of the highest order."

During the last year considerable improvements have been made in the veterinary department. Particularly the study of veterinary anatomy and the clinic are now on a much better basis. The stalls in the building used as a veterinary hospital have been improved, and several instruments and other appliances have been procured. But more is necessary. The part of the building used as a hospital ought to be separated from the other part by a high partition; and an appropriation of about \$100 will be needed to procure more instruments and appliances in order to be prepared for the treatment of every case that may be presented.

A new dissecting table, fully adapted to its purpose, has been ordered.

For the purchase of anatomical material, such as old or crippled horses, an appropriation of about \$35 will be needed, and an appropriation of \$100 for students' assistance and prosector work, the same as last year, is required.

Improvements have also been made in the course of studies as laid down in the catalogue. The general complaint of nearly all candidates for admission has been: First, that our requirements for admission are too high, and second, that our course included too many studies which have no direct bearing upon veterinary medicine. The whole course has been improved, and the requirements for admission, although on the whole not lowered, have been made so that they can be met by a much larger number of applicants. If we would lower these requirements, or accept every applicant, and shorten our course, we might get a large number of students; but as it cannot be the aim of the Ohio State University to flood the state with a large number of indifferently educated and poorly qualified veterinarians, and as a thorough veterinary education cannot be obtained in less than three or four years, it is neither advisable to lower the requirements for admission, nor to shorten the course. I take it to be our object to give thorough instruction, and to send out veterinarians who shall fully deserve the confidence of the people. This cannot be done in a shorter time than is required by our course; neither can such studies as chemistry, botany, histology, bacteriology, laws of hygiene, microscopy, etc., be dispensed with in the present age. The time when a veterinarian could get along without them, fortunately, belongs to the past. But as some other institutions graduate a young man after an attendance of only two "sessions," and as in the State of Ohio there is no law regulating the practice of veterinary medicine and

surgery, we must, for a while at least, be satisfied with quality rather than quantity, and cannot expect a large number of students.

Very respectfully submitted.

H. J. DETMERS,
Professor of Veterinary Surgery.

Ohio State University, October, 1887.

AGRICULTURAL CHEMISTRY.

W. H. Scott, President:

SIR: The undersigned respectfully submits the following report of the department of agricultural chemistry, for the year ending June 22, 1887.

The number of students enrolled in the classes of agricultural chemistry during the year was as follows:

First year agricultural chemistry—

Fall term.....	19
Winter term.....	13
Spring term.....	8

Sophomore agricultural chemistry—

Fall term.....	1
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The number of students for the present term is:

First year agricultural chemistry.....	17
Sophomore.....	3

The class work in the laboratory for the spring term was materially increased, otherwise the work of the department was essentially the same as the preceding year.

With the appropriation for this department the necessary supplies for the present year have been purchased.

Very respectfully,

H. A. WEBER.

Ohio State University, October 1, 1887.

PHARMACY.

President W. H. Scott:

DEAR SIR: I herewith respectfully submit the second annual report of the department of pharmacy.

The number of students enrolled in this department for the year was 13, all of whom, with the exception of two, continued throughout the year. The work has progressed very satisfactorily. The three seniors, who were the first to receive the degree of Ph. G. from the University, passed a successful examination before the Ohio Board of Pharmacy and registered under the state law as pharmacists, some months before the final examination here. If it would be considered an indication of efficient training, I might also state that one junior, who had the temerity to make the attempt, was also successful before the Ohio board.

Very gratifying progress has been made in the collection of specimens for our

cabinet, which is now almost complete. In this matter, we are largely indebted to the liberality of Messrs. Powers & Wightman, of Philadelphia; Messrs. Lehn & Fink, of New York city; Messrs. Park, Davis & Co., of Detroit; and Messrs. Kauffman, Lattimer & Co., of this city, all of whom have made liberal donations. Not much has been added in the way of apparatus, owing to the lack of appropriations, and of suitable quarters for their reception, had appropriations been made. I wish again to call the attention of the board to the necessity of providing suitable accommodations for this department. I think it has been satisfactorily demonstrated that the department can be made a decided success, if it may not already be so considered. In point of numbers, it certainly is not the least important of the technical departments of the University, and if it is expected to be continued with any degree of success, some provision is an absolute necessity. When it is remembered that the students in veterinary science have also one year of pharmacy, it adds still another point to the importance of proper provisions. We are at present indebted to the kindness of Prof. Weber for the use of his lecture room and laboratory, and, while he kindly affords us every facility in his power, it is greatly inadequate and at the same time causes him much annoyance and inconvenience. The present year has opened with an increased number of students and is in every way encouraging. But the matter of providing working accommodations is something which needs immediate attention. I will just say that at the present time Prof. Weber has in his classes twenty students. I have in the class of pharmacy fourteen. Next term all of these students will be required to do laboratory work. Prof. Weber's laboratory contains twenty-four desks, and the problem before us now is how to divide twenty-four desks among thirty-four students.

If I might be permitted to enumerate the wants of this department, I should say that a new building is a prime necessity. This might be detached or built as a wing to the present laboratory building, and, in my opinion, should contain a large lecture room, a large laboratory, two store rooms and a private room. These rooms and the laboratory should be fully equipped with all the latest improved apparatus. One of these rooms should be fitted out as a drug store with all the appliances thereto. With such an outfit we might be in position to meet any future demand on the department, and our chances of success would be infinitely greater. The expense of such an establishment would be comparatively small, not to exceed at the most \$8,000 or \$9,000, and I am fully impressed that such an expenditure is due the pharmacists of Ohio. I wish again to express the thanks of the department to Profs. Norton and Weber for numerous courtesies extended.

Trusting that you will urge upon the board the consideration of our necessity, I remain,

Yours truly,

GEORGE B. KAUFFMAN.

Ohio State University, October 31, 1887.

HISTORY AND POLITICAL SCIENCE.

William H. Scott, President:

SIR: I have the honor to submit the following report of the department of history and English language and literature, for the year ending June 22, 1887.

The number of students enrolled in the various classes in the department was as follows:

HISTORY.	1ST TERM.	2D TERM.	3D TERM.
History B (Modern European)	28	28	26
History C (Advanced investigation).....	9	9	7
United States Constitutional.....	37	34	32
Preparatory—United States (Sec. A)	32	—	—
“ “ (Sec. B)	—	24	—
“ General History (Sec. A).....	28	—	—
“ “ (Sec. B)	—	—	30
Totals.....	134	95	95
ENGLISH.			
English C (Advanced literature).....	11	11	11
English B (Anglo-Saxon and literature).....	16	14	14
English A (Advanced rhetoric).....	83	74	70
Preparatory—Rhetoric (Sec. A).....	—	35	—
“ “ (Sec. B)	—	—	19
Totals.....	110	134	114
POLITICAL ECONOMY.....	28	28	27
Total enrollment in all classes in the department.....	272	257	236

Counting the members in each class but once for the year (not by terms), the enrollment in the history classes was 188, as against 122 in the year previous; in the classes in English, 164, as against 104 the previous year; and in Political Economy, 29, as against 18. In addition to the foregoing work, rhetorical exercises, consisting of essays and written critiques thereon, were maintained, requiring the presence of juniors and sophomores one hour each per week.

While it was expected that the adoption of the remodeled courses in June, 1886, would increase the enrollment in this department, so great an increase would not have resulted except for the fact that the year just closed was a transition year between the old and the new curriculum, and of necessity members of two college classes were, for the one year, enrolled in the same classes in history, and in one of the classes in English. This “doubling up” was especially noticeable in United States constitutional history and in English A. The new courses now being fully established, the enrollment during the coming year will better indicate the normal size of the classes in the department.

The interest of the students in the work was better sustained, and the results were more satisfactory than in the previous year. The course known as History C is a course for advanced students, offered for the first time last year. As stated in my last report, it is “designed for original study and research in the institutional and financial history of the United States.” It is the German *seminar*, adapted to our institution and to our materials for research. While several of the larger American colleges have used these methods for some years, this is, so far as I know, its first trial on Ohio soil. It is a gratifying fact that, though it is purely an elective course, several students entered upon it during this, its first year, and presented results that will compare favorably with the products of older and better equipped institutions.

The addition during the past year of many valuable works and documents on American history has fully doubled the usefulness of the library of the department in that special field. In European history we seriously need many additions to the library, while our available works on political science are hardly worthy of mention. The shelves in the library contain very few of the books that should be accessible to every student of political economy in these times when economic questions are of

such paramount importance. Fortunately I have been able to place a few books from my own working library in the hands of students, thus helping to supply some of the most glaring deficiencies of the University library. This has, however, proved a poor expedient, since few students are willing to avail themselves of a loan from a private library. Twenty-five or even fifty dollars a year for the purchase of books in two such extensive fields as history and political science is, as everyone knows, entirely inadequate. I would, therefore, respectfully ask, through you, that an appropriation of one hundred dollars from the general fund be made for the present year for the purchase of books upon economic subjects, in addition to the department's *pro rata* allowance from the annual library fund.

The recent division of the work of this department and the creation of the department of English language and literature makes it unnecessary and improper for me to speak of the present prosperity or needs of the latter. In ceasing my connection with the department of English, and in wishing my colleague, Professor Welsh, the full measure of success in its future administration, I cannot refrain from testifying to the unflagging zeal with which he has labored during the past two years with me in the department as it was then constituted.

Very respectfully,

GEO. W. KNIGHT,
Professor of History and Political Science.

Ohio State University, October 1, 1887.

ENGLISH LANGUAGE AND LITERATURE.

President W. H. Scott :

As you are aware, English C requires each student to study, in its entirety, one or more of the acknowledged masterpieces of each representative writer—a requirement that entails the reading of at least as many productions per term as there may be members in the class. Some of the necessary copies, of course, can be supplied from the public libraries, but most of them must be bought. This involves an expense which very few of our students can afford.

Permit me, therefore, to express the hope that the honorable board of trustees may be pleased to authorize the purchase of from twelve to fifteen duplicate copies of the masterpieces for the year's work.

Careful investigation of the subject this summer enables me to say that the desired copies can be obtained at an average price of fifteen cents. The aggregate expenditure for this important and permanent gain to the facilities of the University would thus be about one hundred and thirty-five dollars.

I may add that since the introduction of the seminary plan, a few years ago, some of the eastern colleges, including Yale, have made similar purchases, and advertise the fact as a special inducement to such as are seeking literary culture.

Very respectfully,

A. H. WELSH.

FRENCH LANGUAGE AND LITERATURE.

W. H. Scott, President:

SIR: The annual report of the department of French is herewith respectfully submitted:

The enrollment in the several classes for the year was:

	1ST TERM.	2D TERM.	3D TERM.
Course A—Sophomore French.....	8	8	9
Course B—Sophomore French.....	17	17	16
Freshman French.....	58	44	37

In the Freshman class the method followed was mainly that of the previous year. The first term the construction of the language was studied by means of a grammar in the language itself. In using such a grammar the student learns to read the language in the beginning of his work. The second term, reading was formally begun, and this, with the study of the grammar, was also the work of the third term.

The report of last year gave the change made in the sophomore year. This change divided the work of that year into two courses, course A having in time three hours per week through the year, intended for the B. Ph. course; and course B having two hours per week through the year, intended for the B. Sc., C. E. and M. E. courses. The work in course A was the critical reading of texts from the classical and modern periods of French literature; composition was studied in the fall term, and during the second and third terms a lecture was given each week on the literature. These lectures were in the French, and the students were required to take their notes in French; when, at the end of the year, the note-books were examined the result was gratifying.

The work in course B was that indicated in the last report: The reading of French prose, chiefly the prose of science, with the study of composition and of the literature. Lectures on the literature were also given in this course, but they were in English. Though the difference between these two courses will grow, rather than decrease, yet I am still of the opinion expressed in my report last year, that the work in course B should not be wholly in scientific prose, as this will not fit the student to read with ease the French of general literature.

Very respectfully,

ALICE K. WILLIAMS,
Associate Professor of French.

GERMAN LANGUAGE AND LITERATURE.

President Wm. H. Scott:

DEAR SIR: I have the honor of submitting the report of the department of German for the academic year ending June 22, 1887.

The following was the enrollment:

First Term—First preparatory.....	60	Two sections.
“ Second “	20	
Second Term—First preparatory.....	46	Two sections.
“ Second “	19	
Third Term—First preparatory.....	39	Two sections.
“ Second “	14	

The work in this department was carried on in the same way as the preceding year; but important additions to the course in German had to be made. These additions, which go into force this year, are specified in the scheme of studies. They consist in greater facilities given to the students to elect German in the arts and philosophy courses; further, in making the study of German compulsory in the science course; and in establishing a one year class in German literature, and another in scientific German. In consequence of these additions, the number of students has been increased very considerably, and it will be necessary in the future to divide the classes into still more sections.

Preparatory pupils and college students are still taught together in the same classes; an arrangement which does not tend to produce the best results, it being impossible to adapt one line of work to two different grades of students, between which there is a difference in age of from four to six years. It will be more than desirable to remove this incongruity, and to form a special beginners' class for college students, as the present arrangement overburdens the preparatory pupils, and gives an insufficient amount of work to college-men.

There is one difficulty which ought to be met before very long, if the greatest efficiency is to be secured for the higher instruction in this department. The facilities which the library affords for advanced work in German are altogether inadequate. If any higher work is to be done, either in scientific German or in literature, it will be necessary to purchase a number of books of reference, and I would respectfully ask for a moderate sum, which would meet the immediate wants of the department.

Very respectfully,

ERNST A. EGGERS.

Ohio State University, October, 1887.

LATIN LANGUAGE AND LITERATURE.

President W. H. Scott:

DEAR SIR: The following report of the department of Latin for the year ending June 22, 1887, is respectfully submitted:

The students registered in this department during the year were classified as: First preparatory, twenty-five; second preparatory, thirty-two; freshmen, twenty-five; sophomores, eleven; juniors, fourteen; total enrollment, one hundred and seven.

The first preparatory class was assigned to Mr. McCoard for instruction; the other classes were taught by myself.

The rate of attendance was high, and the results of the year's study were gratifying to the instructors, to whom it is a constant source of encouragement that the standard of scholarship is steadily rising, and that successive classes come to the later years of the course with better and better training.

The greatest deficiency in the material equipment of the department is the lack of a collection of maps, plans, models, photographs of ancient ruins, and works of art, etc., forms of illustration which appeal strongly to the mind through the sense of sight. This phase of classical instruction requires, and, in my opinion, will amply repay special emphasis. I hope that the trustees of the University will soon be able to make a liberal appropriation for the foundation of such a classical

museum, which would be of equal value to the departments of Latin and Greek, and thus benefit a large number of students.

Very respectfully,

SAMUEL C. DERBY,
Professor of Latin.

Ohio State University, October 1, 1887.

GREEK LANGUAGE AND LITERATURE.

President W. H. Scott :

DEAR SIR: I have the honor to submit my annual report of the work done in the department of Greek for the college year ending June 22, 1887.

The number of students enrolled in the four college classes during the year was as follows :

Senior Greek	9
Junior Greek	8
Sophomore Greek	2
Freshman Greek	9
<hr/>	
Total	28

Out of a total of twenty-five candidates for degrees at the commencement in June, it will be seen that eight obtained the degree of bachelor of arts; a proportion that seems to show that the demand for instruction in Greek is at least not diminishing.

The interest in classic archæology would be greatly stimulated, and the work of the department in this direction much facilitated, if a small portion of the department appropriation for books could be applied to the purchase of charts, photographs, or casts illustrative of ancient life and manners.

The course, as laid down in the catalogue, was followed as closely as possible, and satisfactory results were attained in all classes.

Very respectfully,

J. R. SMITH.

MILITARY SCIENCE AND TACTICS.

W. H. Scott, President :

SIR: I have the honor to submit the following report for the year ending June 22, 1887 :

At the beginning of the college year, October 16, 1886, Lieut. Blocksom, 6th U. S. cavalry, organized a battalion of four companies, to which a band was added November 11, 1886. The number of companies was reduced to two at the beginning of the third term, the number of cadets having been reduced from one hundred and fifty-

nine to one hundred and twenty-one. On May 7th, a competitive drill was had to decide which company should represent the University at a prize drill to take place at Wooster, Ohio. Company A was selected. It was found impossible to arrange this match, and Company A, by permission of the faculty, took part in the competitive drill at Findlay, Ohio, on the 17th of June, winning the second prize.

The cadets were drilled in infantry tactics throughout the year. In May a detail was drilled in the manual of the piece, artillery tactics.

On the 6th of July I reported for duty as Professor of Military Science and Tactics, relieving Lieut. Blocksom. There are now two hundred and thirty-four cadets on the roster for drill. All students, except seniors and juniors, are required to drill, unless excused by the President for sufficient cause. A battalion of four companies has been organized. A band was also formed early in the term. The cadets, as a rule, manifest a commendable spirit and interest in their work, making the outlook for the coming year a promising one.

I recommend that cadets officers be given commissions and cadet non commissioned officers warrants, signed by the President of the University and the commandant of cadets. If this recommendation is approved, the commissions and warrants will be certificates of service in the battalion and of proficiency in drill. They should be forfeited for inefficiency, neglect of duty, indifference or any misconduct which, in the opinion of the commandant, renders the officer or non-commissioned officer unworthy to hold his position in the battalion.

I renew the recommendation of Lieut. Blocksom, that action be taken to secure the erection of a building to be used as a gymnasium, armory, and drill hall.

Very respectfully,

Your obedient servant,

CHAS. E. KILBOURNE, 1st Lt. 2d Artillery,
Prof. of Military Science and Tactics.

Ohio State University, October 16, 1887.

THE LIBRARY.

President W. H. Scott:

DEAR SIR: I have the honor to present the annual report of the library for the year ending June 22, 1887.

At that date the total number of volumes, exclusive of pamphlets, belonging to the library, was 7,708, of which 864 had been added during the year. Many of these were expensive books, so that the increase of the library in number of volumes was less than in preceding years.

Most of the books are still in good condition; a few show plain marks of much use, and a smaller number need to be rebound.

It may be justly said that the collection, though still small and inadequate, is, for its size, unusually well selected and serviceable. The volumes that have been purchased, were selected, in almost every instance, by those thoroughly familiar with the subject and constrained to choose the best, because unable to purchase more than a very few of the many works published.

Noteworthy additions were made in the subject of engineering and American history; in the former a complete set of the transactions of the American Society of Civil Engineers was secured, and in the latter several valuable sets were completed and many important works requisite for original research in American political and economical history were placed upon the shelves.

In English literature a considerable number of volumes by American writers was added. Some of these served to complete partial sets, others were chosen as the best specimens of the productions of their authors.

PERIODICALS.

The number of periodicals received at the library was nearly the same as the previous year, and, with very few exceptions, the list remained the same. I have to confess that I have been unable thus far to make a satisfactory arrangement for procuring them.

We are still receiving, free of cost, *City and Country*, *American Manufacturer*, *American Engineer*, *Columbus Record*, *Watchman*, *Christian Register*, *Patent Office Gazette*, *Farm and Fireside*.

I venture to call attention again to the importance of procuring perfect sets of several periodicals indispensable for advanced work in the various departments of science. Such publications grow yearly more scarce and costly.

It is a matter for regret that the growth of the library in this and other directions will be much checked for the current year by the reduction of the usual appropriation to one thousand dollars.

At least five times that sum should be expended annually for the next five years in order to lay a proper foundation for a first class college library.

If the first requisite of a library is books, the second is certainly a good librarian. I should fail in my duty if I did not represent to you the urgent need of increasing the salary of the assistant librarian to a sum sufficient to procure the service of a well-trained librarian for the entire day. I can see many ways in which the library could be made more helpful, better secured from loss of books, and more perfect in organization, if put under the charge of a professional librarian.

During the year just ended, the library was fortunate in having successively the services of two recent graduates of the University, Miss Clara Fisher and Miss Anna N. Scott; both gave it their entire attention and found themselves fully employed. Another reason why the library should be placed under the immediate oversight and have the presence of an officer of the University, is the fact that during several hours of the day it has become a study room for a large number of the younger students, so that the library is virtually a school room as well as a reading room. It is not easy to secure the quiet most conducive to the proper use of a library under such circumstances, especially when the room is in charge of a student.

Gifts of books have been received from the United States Government, the State of Michigan, Hon. John Sherman, Hon. J. H. Outhwaite, Gen. J. W. Keifer, The Royal Society of Canada, the Canadian Government, Marietta College, Institute of Mining Engineers, the State of Ohio, the Columbus Horticultural Society, and several members of the faculty of the University.

Respectfully submitted,

S. C. DERBY, *Librarian*.

Ohio State University, October 1, 1887.

THE UNIVERSITY GROUNDS.

President W. H. Scott :

DEAR SIR: During the past college year, in addition to my regular work as the head of the department of botany and horticulture, I have performed the duties of superintendent of the grounds.

This includes the care and keeping of something like eighty acres of the University estate, besides the planning and execution of such improvements as the appropriation for the "care of grounds" will admit. With the means at my disposal no improvements of marked importance could be made during the year.

The following are among the slight changes for the better that have been effected:

1. The grass upon a large portion of the lawn, lying directly in front of the main building, was completely destroyed by the larva of the May-beetle a year ago the past summer. In early spring this was carefully re-seeded, thoroughly top-dressed, and is now in a fairly good condition despite the severe drouth of the past season.

2. About seventy-five ornamental and shade trees, embracing twenty-five different species, were planted around the three dwelling-houses on the campus, now occupied by Professors Thomas, Knight and Tuttle. The choice of variety, and the positions in which the trees were planted, were left mainly to the occupants of the respective houses. These trees were planted with great care, and all of them made a fine start. The severe and long protracted drouth checked the growth and caused the death of a small percentage. These will be replaced next spring.

3. The unsightly hot-beds and cold-frames which have occupied the slope just south of horticultural hall, where they served as necessary adjuncts to the greenhouse, have been replaced by a cheap propagating house. Although this is by no means as good or substantial a structure as could be desired, it is a decided improvement and will add greatly to the means of illustrating applied botany and practical horticulture. It also affords much-needed facilities for experimental work in horticulture, and will enable the department to carry a larger stock of flowering and foliage plants for ornamenting the campus.

Beside the above the roads and walks have been kept in fairly good order, and several minor improvements have been made.

It may not be improper to state that the superintendent is obliged to give personal attention to a great variety of work. The whole campus, with its lawns, trees and shrubs, walks and drives, the brook, lake and spring, must be constantly looked after. The work is never done. Every day brings its care and responsibilities.

It is only fair to say that year by year the grounds have been constantly improving. The changes that have gradually taken place are not always fully realized by those who have witnessed them. Students who were here five or six years ago, and now return as visitors, appreciate what has been done, and the orderly appearance of the grounds elicits words of commendation.

ADVANTAGES OF BEAUTIFUL SURROUNDINGS.

Few things are of greater value to a college or University than a beautiful and attractive campus. If the surroundings be harsh and unattractive, the buildings uninviting, the grounds devoid of interest and beauty, the institution cannot fulfill its true mission.

One of the most potent factors in the real success of a college or university, is to be found in the affectionate regard of its alumni and students. This sentiment is not developed alone by the contact of student and professor in the class-room. It is more likely to be stimulated by beautiful and attractive surroundings. Attractive buildings, beautiful grounds, fine landscape effects, memorials, etc., everything which quickens the sense of beauty, excites self-respect, has not only an educating value for the student, but is developing a strong bond of attachment for the place. It is this feeling which must be shared by trustees, professors, and students, before a college or university can attain a full measure of success.

NEEDED IMPROVEMENTS.

The following are among the most urgent needs. They have been mentioned before, but must be repeated until they no longer exist.

1. A brick walk from the main building to horticultural hall.
2. A number of street lamps along the principal avenue leading from High street to the main building, and from the latter to the dormitory.
3. Better-kept lawns. This can only be attained by the use of a horse lawn mower.
4. The planting in groups, at suitable points on the campus, different species and varieties of trees of the same family, the same to constitute the beginning of an extensive arboretum.
5. The planting for illustrative purposes and landscape effect, of a collection of the finest foreign and native shrubs—both deciduous and evergreen.
6. The planting of a collection of our hardy herbaceous perennials for illustration and ornament.
7. The labeling with both common and scientific name of at least one specimen of each variety of tree and shrub on the campus.

RECOMMENDATIONS.

I repeat the suggestions already made in previous reports regarding the care of the athletic grounds.

Inasmuch as the University has no gymnasium, it is not unreasonable to ask that some encouragement be given to field sports. Means for physical development should be found side by side with those for intellectual development. In no other way can a full measure of health be secured and preserved.

I again ask that an appropriation, sufficient to keep the base and foot-ball grounds and tennis courts in good order, be placed at the disposal of the superintendent of grounds. Two hundred and fifty dollars, judiciously expended, would place and keep these grounds in excellent order throughout the college year. If kept in perfect order they would be more generally used—to the signal advantage of the great body of our students.

This is a very modest request for the interests of physical culture. I hope the University may do more; it certainly should do no less.

A WORD OF COMPLAINT.

During the past two or three years the appearance of the grounds has been seriously marred by the thoughtless acts of a few careless persons. We have been greatly annoyed by stock running at large, or not being properly secured. The lawns have been greatly disfigured by needless foot-paths, or by means taken to prevent them; shrubbery has been broken, and flowering plants more or less injured. Students have committed, and are committing, some of these offenses, but the principal aggressors are outsiders.

While the actual injury is slight, the annoyance and detraction from the generally good appearance of the grounds is very considerable.

It would probably be next to impossible to put a stop to all of these offenses, and leave the grounds as free for public use as is desirable. Yet, with proper effort in the right direction, I believe a large share of this petty injury to University property could be stopped.

ACKNOWLEDGMENTS.

Mr. James Kelley continues faithful in the discharge of his duties, and Mr. C. A. Roth has labored zealously for the adornment of the campus.

REQUISITE APPROPRIATION.

To keep the grounds in respectable order, and carry out the most urgently needed improvements, will require an appropriation of not less than \$2,000.

Respectfully submitted.

WILLIAM R. LAZENBY,
Superintendent of Grounds.

November 15, 1881.

FARM DEPARTMENT.

Farm Committee of the Board of Trustees, Ohio State University:

SIRS: I have the honor to submit herewith my report of the operations and condition of the farm department for the year ending October 31, 1887.

As has been the custom, the financial statements first occupy the attention. Statement "A" gives, in a condensed form, an inventory of the live stock, implements and produce on hand November 1, 1886, and at the close of the year, October 31, 1887, together with amounts purchased, produced, consumed, and sold during the year.

The cash receipts and disbursements for the year are exhibited in statement "B," as made up from the monthly financial statements, submitted at the close of each month to the Board of Trustees, and verified by the books of the department and the vouchers for the expenditures, all of which are herewith submitted for your inspection and approval.

There are outstanding against the department bills to the amount of \$139.85; and there is due the department from various sources the sum of \$1,011.97, all of which is believed to be good.

A short resume of the work done on the farm follows, together with an account of some of the experiment work and most urgent needs of the department.

Very respectfully,

W. S. DEVOL,
Superintendent of Farm.

November 1, 1887.

STATEMENT A.

Items.	On hand Nov 1, 1886.		Bought.		Produced.		Consumed.		Sold.		On hand Oct. 31, 1887.	
	Number or amount.	Value.	Number or amount.	Value.	Number or amount.	Value.	Number or amount.	Value.	Number or amount.	Value.	Number or amount.	Value.
Horses.....	9	\$1,190 00	1	\$175 00	.....	.....	.....	.....	1	\$25 00	9	\$1,340 00
Cattle.....	47	4,900 00	1	40 00	19	\$800 00	.....	.....	12	264 10	50	5,400 00
Hogs.....	54	400 00	3	47 00	34	323 65	.....	.....	32	298 65	59	425 00
Implements.....	.....	3,202 20	.....	358 76	.....	.....	.....	.....	.....	.....	.....	3,627 00
Corn.....	2,392 bu.	700 00	114¾ bu.	57 48	1,460 bu.	600 00	2,600 bu.	842 88	44 bu.	15 00	1,240 bu.	514 60
Wheat.....	.....	.....	2 bu.	2 00	974 bu.	813 26	46 bu.	34 50	92½ bu.	778 76	.....	.....
Oats.....	252 bu.	63 00	79¼ bu.	34 70	120 bu.	30 00	441¼ bu.	125 20	6 bu.	3 80	10 bu.	2 50
Beets.....	50 tons.	200 00	.....	.....	25 tons.	200 00	50 tons.	20 00	1 t n.	8 00	34 tons.	194 00
Hay.....	70 "	700 00	27 tons.	350 11	65 "	780 00	122 "	1,230 11	2½ tons.	28 31	50 "	600 00
Fodder.....	1,277 shk.	255 40	.....	.....	1,165 shk.	223 00	1,277 shk.	255 40	.....	.....	1,165 shk.	223 00
Straw.....	38 tons.	152 00	.....	.....	45 tons.	180 00	35 tons.	.....	9½ tons.	.....	35½ tons.	142 67
Milk.....	.....	.....	.....	.....	127,956 lbs	3,127 75	10,364 lb.	264 12	117,592 lbs.	2,863 63	.....	.....
Labor.....	.....	.....	.....	.....	70,898 ft.	807 15	2,500 feet.	2,381 25	.....	235 30	.....	.....
Lumber.....	.....	.....	9,625 ft.	1,054	110 cords.	110 88	.....	34 65	33,898 ft.	437 15	43,525 ft.	980 69
Cord wood.....	.....	.....	.....	.....	.....	.....	.....	.....	60 cords.	60 88	50 cords.	50 00

STATEMENT B.

RECEIPTS.

From H. A. Weber, cash on hand Nov. 1, 1886.....	\$42 17	
“ sale of milk.....	2,863 63	
“ “ general farm produce.....	455 24	
“ “ thoroughbred cattle.....	122 75	
“ “ other cattle.....	141 35	
“ “ horses	25 00	
“ “ swine	298 65	
“ bull service.....	39 00	
“ boar “	4 00	
“ labor and hauling.....	235 30	
“ pasture	24 50	
“ sale lumber and wood.....	514 37	
“ miscellaneous sales.....	28 53	
“ house rent.....	30 00	
“ note of W. S. Devol.....	658 99	
		\$5,483 48

DISBURSEMENTS.

For labor.....	\$3,381 25	
“ farm implments, tools, etc.....	330 98	
“ dairy utensils.....	27 88	
“ repairing, shoeing, etc.....	158 88	
“ printing, stationery and postage.....	36 74	
“ dairy cows.....	40 00	
“ horses	175 00	
“ swine	47 00	
“ grinding	34 76	
“ feeding stuffs.....	602 78	
“ freight	6 76	
“ seeds	48 81	
“ sawing lumber.....	506 50	
“ advertising	50 54	
“ miscellaneous items.....	35 60	
		\$5,483 48

IMPROVEMENTS.

A sufficiently full account of the general farm operations in the raising of the crops for the year is given in the report upon experiment work and in Statement A. In addition to the work there reported, quite a little attention has been given to permanent improvements.

TREES PLANTED.

Early in the spring, as soon as the weather would admit, trees were set along High street and Woodward avenue where those previously set had died or been broken down. Forty-two American Elms (*Ulmus Americana*) were required to fill vacancies. These were heavily mulched, and during the protracted dry weather of the summer given two copious waterings, and every attention was given to cause them to live and grow; but the drought was too severe, and eleven of them died. These have been replaced with new ones this fall.

DITCHING.

The course of the brook, known as Neil's Run, was straightened in the east pasture near the campus. It was rapidly washing away the high embankment on the south side, the narrow path along which the cows passed being nearly washed down.

In straightening this a cut of ten rods was made at a cost of \$55.00. The fence separating the pasture from the field used by the Experiment Station was moved to the south, taking about half an acre of unused ground into the pasture. The old creek-bed was subsequently filled from the south bank, grading it sufficiently for seeding to pasture grasses. Labor to the amount of \$40.00 was expended upon this.

The old rail fence between the campus and this part of the pasture was removed, and a new wire fence built, the course being changed so as to throw an acre of the pasture into the campus. The iron spring, thus taken into the campus, was cleaned out and an overflow dug for it. The main of the underdrain for the campus east of the horticultural hall opened into the part of the pasture taken into the campus. This was continued to the creek, eight-inch sewer-pipe being used, and the joints cemented.

The underdrain through the southwest field was found to be choked up with roots from the trees and shrubs along the south line fence, and 35 rods of this had to be taken up, cleaned and relaid. That part near the river had been laid with 8-inch sewerpipe and cemented on top. In removing these many of the pieces were unavoidably broken. In order to effectually exclude the roots from the drain, the joints of the sewer-pipe were thoroughly cemented as it was relaid. The water is now carried off rapidly and well.

CLEARING.

The clearing of the island was prosecuted during the winter and spring, nine acres being cleared. The timber was very heavy and difficult to remove, and only two acres of this were ready for cultivation this season; from the two acres an excellent crop of corn was obtained. The expense of clearing this ground was greater than was anticipated, costing forty dollars an acre. But in the process of clearing 110 cords of wood were obtained, worth one dollar a cord, and about thirty cords more can be easily cut from the trees now down and off the field. From the heavy timber 70,000 feet of lumber was sawed, at an expense of \$530.00. Nearly one-half of this has been sold, for which \$437.15 was obtained; that yet on hand is worth \$10.00 per thousand feet.

A large part of this can be utilized for flooring in the stables and barns and in repairing buildings and fences.

FENCING.

The south line fence west of the dormitories was removed—a light task, as many of the posts and the ends of most of the boards were rotted off—with the intention of replacing it at once with a strong fence of all new material, and the posts and boards were purchased. But the line was not straight, and it was deemed advisable before rebuilding to have the correct location ascertained by a competent surveyor. Prof. C. N. Brown kindly consented to run the line; but owing to the difficulty in finding the proper land-marks and corner stones, and his being engaged at other work a greater part of the season, the survey is but just completed. When Woodruff avenue was opened the north line fence was moved by the contractors, and reset in sections of several panels each, and very poorly done. This will have to be reset, and has been taken down this fall. The rail fence west of the wood-lot was removed and a good post and board fence put in its stead. Repairing has been done on all other fences. Material has been purchased, and some sawed from the timber in clearing for making a portable fence of a different pattern from that used on the farm, and forty panels of it has been made.

ROADS.

The road from the campus to the barn has been resurfaced with gravel, as has a part of that leading to the river. The fill across to "the south island," washed out last winter, has been rebuilt higher than before. Several days' labor were also expended in repairing the lane through which the cows are driven to the first pasture.

BUILDINGS.

A new, strong floor has been put in the farm coal and wood-house, and a new plank floor in a part of the horse stable, and a part of the dairy barn. New eaves-troughs and spouting were put up on the tenement house, and those on the large barn and farm-house repaired.

STOCK BOUGHT.

A young horse was purchased for use in the dairy, for which \$175 was paid. Two Berkshire sow pigs and one boar have been obtained at a cost of \$47. It is desirable to have on the farm, for the inspection and study of students in agriculture, good specimens of all the most important breeds of our domestic animals that can be bred and handled here, and to be able to supply thoroughbred animals to those who wish to purchase them.

IMPLEMENTS.

Of farm machinery, the most important purchase has been a "Victor Manure Spreader," for which \$110 was paid. This does excellent work, and is a desirable farm implement. A No. 13 "Hocking Valley Feed Cutter" has been received gratis from the Hocking Valley Manufacturing Company, of Lancaster, Ohio, and a "Stow-bridge Broadcast Seeder" from the S. Freeman & Son Manufacturing Company, Racine, Wisconsin.

The old "Kemp" manure spreader was exchanged for an "Ohio Grain Drill." A large number of small tools, such as a boring-machine, hoes, axes, mattocks, etc., have been purchased, to keep on hand a supply sufficient to efficiently carry on the general farm work.

DAIRY.

None of the thoroughbred young cattle have been sold. There are now on the farm six Jersey heifers, two Jersey bull calves, and one Devon heifer calf, all less than one year old, they having been retained with the view of forming a large herd of thoroughbreds. One registered Jersey cow, Mavina of Stattdsburgh, 5238, died of hoven or bloat. Although but ten years old, she had aged very rapidly, and was too infirm for breeding, and was of little value. Another, Rosa Page, 4009, had become so infirm as to be of no value to the herd, and was sold, to be slaughtered. Others of the Jersey cows are far past their prime. One of the Devon cows, Nettie, 2148, whose calves were always deformed, was also disposed of.

Thirty-one cows have been giving milk through the year; an average of 11.3 pounds of milk each, daily, besides all that an average of four calves wanted twice a day. A statement is submitted herewith showing the quantity of milk obtained at each milking for each day in the year, and the total for each month.

LABOR.

On some of the busiest days as many as fifteen students have been at work upon the farm. Throughout the year four farm hands have been regularly employed, and during a large part of the time there were from three to five others at work. All the milking and delivering of the milk has been performed by six students.

NEEDS OF THE FARM.

There is a number of improvements very much needed upon the farm. There should be a model farm barn, such an one as the students are taught should be upon every well equipped farm. The educational interest it has to students demands it, and the necessity of some suitable quarters for conducting experimental work in stock feeding as well. The barn now on the farm is very inconvenient for general farm crops and unsuitable to dairy purposes; nor has it accommodations for storing the varieties of grains obtained by the extension of the experiment work in field crops. More and better arranged and equipped piggeries are much needed. At present proper care and attention cannot be given brood sows in the rearing of thoroughbred animals; nor to the conducting of experiments in feeding. There is an increasing interest in the subject of stock-feeding, and the University should be doing something towards the solution of some of the problems of this important branch of agriculture. An eight or a ten-horse-power farm engine would prove of great value to the farm. It is needed for threshing the varieties of grain. The power has now to be hired at a considerable expense. There is a good separator that can be used advantageously when suitable power is supplied. The tread power that is upon the farm is worse than useless, because of the injury done to the horses. There are also good and valuable machines for cutting corn-fodder, hay and straw, and for grinding corn; but they are of little use to the farm so long as a good motive power is lacking.

A complete survey of the farm is much needed, giving the exact area and form of each field, and a topographical plan made, suitable for publication, with the reports upon field experiments. This would add much to the value of the published results of experiments.

A farm residence should be erected, supplied with all the improvements conducive to the greatest convenience and comfort of the farmer and his family, and the approved modern sanitary arrangements for the maintainance of health.

EXPERIMENTS.

VARIETIES OF WHEAT.

There were forty-one varieties of wheat grown in experiment plots last season on the Experiment Station grounds. The location was one very much exposed to the severe weather of last winter, and the varieties suffered very materially from this exposure. In many portions of the field there were small patches where the water was held by the clay-soil in slight depressions, and ice freezing over the wheat, remained until the plants were all killed. Where such was the case, a deduction was made from the plot; but in all cases where the destruction of the plants was only partial, the area is included in the plots. These plots were about one thirty-second of an acre in size, all but about fifteen of those toward the bottom of the list having a western exposure. The yields, size of kernel and character of straw are shown in the following table:

TABLE I—VARIETIES OF WHEAT.

Plot number.	Variety.	Yield of grain per acre.	Weight of measured bushels.	Quality of straw.	Length of straw.	Size of grain.
	<i>Red Smooth.</i>	<i>Bushels.</i>	<i>Pounds.</i>			
1	Early Rice.....	25.2	58.5	Weak	Medium....	Medium.
2	Extra Early Oakley.....	26	63	Strong	Short	"
3	Farquahr.....	36.6	57.5	Medium....	Medium....	"
4	Finley	27	61	Strong	Short	Small.
5	French Prairie.....	33.5	60.8	"	Medium....	Medium.
6	German Emperor.....	20	56	Weak	Long	"
7	Hicks	26.5	61.5	Strong	Medium....	Small.
8	High grade.....	29.1	59	Very weak.	"	Medium.
9	McQuay.....	19.2	59	Strong	Short	"
10	New Monarch.....	36.1	58.5	Medium....	Long	"
11	Patagonian Trigo	27.3	58.5	Very weak	Medium....	Large
12	Poole	25.5	58.8	Strong	"	Medium.
13	Red Brazillian.....	28.2	59.5	"	Long	Large.
14	Red Fultz.....	35.2	59	Medium....	Medium....	Medium.
15	Red Line.....	31.6	59.5	Strong	Long	"
16	Rockey Mountain.....	23.1	61.3	"	Short	Small.
17	Witter	40.8	60	"	Long	Medium.
18	Wyandott, red.....	28.9	60.5	"	"	Small.
	<i>Red Bearded.</i>					
19	Bearded King.....	25.3	59.5	Very weak.	Long	Large.
20	Deitz.....	25.4	61	Strong	Medium....	"
21	Diehl's Mediterranean..	26.9	59.5	Medium....	Long	"
22	Egyptian	28	60.5	Strong	Large	Medium.
23	Fulcuster.....	20.3	58.5	Medium....	Medium....	Large.
24	Hungarian	37.4	60.5	Weak	"	Medium.
25	Mediterranean.....	22.3	58.5	Medium....	"	Large.
26	Nigger	24.6	60	Strong	"	"
27	Raub's Black Prolific....	18.7	59.8	Medium....	Long	Medium.
28	Silver Chaff, bearded....	32.7	60	Weak	Medium.. ..	"
29	Tasmanian Red.....	22.1	59.8	Very weak.	"	Large.
30	Theiss.....	29.5	60	Weak	"	Medium.
31	Tuscan Island.....	31.1	59.5	Medium....	"	Large.
32	Valley	34.9	59.5	Strong	"	Medium.
	<i>White Smooth.</i>					
33	Landreth.....	32	59	Strong	Long	Large.
34	Martin's Amber.....	21.4	61	"	"	Medium.
35	Miller's Prolific.....	16.5	58	"	Short.....	Small.
36	Royal Australian.....	38.8	59	Weak	Medium....	Large.
37	Silver Chaff.....	30	59.5	Medium....	Long	Medium.
38	Surprise	32.7	58.5	Stron	Medium....	"
	<i>White Bearded.</i>					
39	Democrat	24.5	60.5	Strong	Long	Medium.
40	Golden Prolific.....	22.3	58	"	Medium....	"
41	Jennings	28.4	59	"	"	Large.

The average yield was 27.9 bushels per acre. This average is much below that of the same and a few other varieties for last year. This falling off, however, is thought to be due entirely to the unfavorable season. The quality of the straw was estimated from the per cent. of the plot that lodged. Thus if 30 per cent. or more lodged, the straw was considered "very weak;" 15 to 30 per cent., "weak," and 1 to 15 per cent., "medium." Such as did not lodge at all were considered "strong;" although there would be a much larger number lodged in a season more favorable to the growth of wheat.

Although there is a wide difference in the yields—the extremes being 16.5 and 40.8 bushels per acre—the variation in average yields of the bearded and smooth varieties of the red and white wheat, is very small. These averages, together with the averages for weight of measured bushel, are given in Table II:

TABLE II.—AVERAGE YIELD PER ACRE OF BEARDED AND SMOOTH RED AND WHITE VARIETIES OF WHEAT:

	Number of varieties.	Average yield per acre—bushels.	Average weight of measured bushel—pounds.
Red, bearded.. .. .	14	27.0	59.4
Red, smooth.. .. .	18	28.9	59.6
Red, total	32	28.1	59.5
White, bearded	3	25.1	59.2
White, smooth.. .. .	6	28.6	59.2
White, total.....	9	27.4	59.2
Total beard.....	17	26.8	59.5
Total smooth.....	24	28.8	59.4
Grand total, all varieties	41	27.9	59.5

The smooth wheats yielded better than the bearded, and the red wheats better than the white. These results would undoubtedly be modified by increasing the number of varieties of white wheat, for a few of the best only were grown, and those known to be decidedly inferior were excluded. The opinion held very generally, that the varieties of bearded wheat in general are more productive, is not verified by our experiments, the smooth wheats usually returning the larger yields.

In addition to the above, six plots were sown on the piece of rich bottom land from which the mangel-wurzels were taken last year. These were sown October 13th, at various rates of seed per acre, the amounts sown depending upon the quantity of seed on hand; because of the lateness of the date there was no thought of making an experiment of it, the object being to obtain a sufficient quantity of seed to sow a larger variety the following season. But an account was kept of the quantity of seed, and area sown of each variety, date of ripening and yield. The quality of the grain from all these late sown plots was very good, and that of

Tasmanian Red and Nigger uncommonly large and of excellent quality. at which the seed was sown, and the rate of yield per acre were as follows:

TABLE III.

Variety.	Rate of seed per acre—pecks.	Yield of grain per acre—bushels.
Nigger	7	11
Tasmanian Red.....	6	11
Extra early Oakley.....	6	10½
Martin's Amber.....	16	48
Wyandott Red.....	11	30 1-3
Velvet Chaff	6	10 3-5

From this experiment it appears that the later that wheat is sown, after a certain time, more seed is required per acre to procure a good stand and large yield. There is, however, a limit to the quantity of seed, beyond which amount it would be unprofitable to sow, however late the seeding may be done. But what this limit may be this experiment does not show. The root crop taken from the ground left it very loose and porous on top, and the wheat froze out badly. It was not troubled with the fly, and there was no rust or smut in this.

For the general crop the following varieties were sown upon bottom land: Finley, Valley, Velvet Chaff, Deitz and Poole. The following table exhibits the results from these varieties:

TABLE IV.

Variety.	Area sown.	Total yield— bushels.	Yeld per acre— bushels.
Finley	8	220	27½
Valley	13	366	28 1-7
Velvet Chaff .....	.....	193	.....
Deitz	2	49	24½
Poole	1-5	3	15

The Finley was sown on wheat ground very early—the last week in August—and made a very rank fall growth, and was almost entirely free from rust and the attacks of the fly. It wintered well and grew very rank in the spring. In consequence it rusted some, and nearly every square rod of it lodged before the berry was filled. Much of the grain of this variety was shriveled and of light weight. The other varieties were sown later, and on corn ground.

The Valley grew in the southwest river bottom field. This grew the most uniform, and stood up the best of any of these five varieties. The kernel was not large but was hard, and of good quality.

The Velvet Chaff grew on the west field river bottom land. About half this field, next the river, lodged badly the remainder stood well and ripened evenly. The grain of that which stood well was of excellent quality, but that which lodged was only second grade.

The Deitz and Poole were grown upon that part of the place known as the "south island," after corn. The Wild Pea-vine or Wild Buckwheat (*Polygonum Convolvulus*) came up in such abundance as to almost destroy the wheat crop, twisting about and lodging all of it, necessitating its being cut with a mower and the scythe. The grain of both these varieties is very large, and of fine quality. Some of it was shriveled this season from its being lodged and the harmful weeds.

EXPERIMENTS WITH OATS.

A series of experiments was begun last season to determine whether the amount of oats it is customary for the farmer to sow is the best. For this purpose six plots, each one-fourth of an acre in size, were sown, the soil being a fertile but stiff clay, plane land, clover sod. Seed was sown upon these plots in quantities varying from three to twelve pecks per acre, the variety of oats being the Clydesdale. The seeding was done with a Buckeye grain drill, the drill being set and tried and reset until the exact amount of grain required was sown for the respective plots. The results of this season's trials are given in Table V.

TABLE V.—THICK AND THIN SEEDING OF OATS.

Plot number.	Seed per acre— pecks.	Yield of grain per acre—bushels.	Weight of meas- ured bushel— pounds.	Yield of straw per acre—pounds.
1	3	45.62	38.5	2904
2	4	47.40	37.5	3084
3	6	49.75	37.25	3188
4	8	50.63	36.5	3212
5	10	49.38	36.0	3392
6	12	46.79	36.0	3284

It is apparent from this trial, that for this soil and the past season, about eight pecks is the proper amount of seed, and that from the use of a greater or less amount of seed a smaller yield is obtained. The increase in yield with the increased amount of seed sown up to eight pecks is remarkably uniform, and the decrease in

yield with an increase in seed over eight pecks, is equally remarkable. The quality of the grain, as determined by the weight, is best from the use of the smallest amount of seed sown, and is poorer from each succeeding plot, that from the use of twelve pecks of seed being the lightest.

The greatest weight of straw was obtained from the ten pecks per acre, there being a gradual and very uniform increase from the two pecks to the ten pecks plot. There was a little less straw upon the twelve pecks plot.

SUGAR BEETS AND MANGEL-WURZELS.

The ground upon which the following varieties of beets and mangel-wurzels grew a rich alluvial bottom. Clover had been on the ground the season before, but was nearly all killed by the severe winter. The ground was newly plowed and prepared and the seeding done on the 2d and 3d of June, with a Planet, Jr., garden seed drill. In order to secure greater uniformity in the distribution of the seeds in the drill row, they were first separated into three grades by means of an adjustable sieve. A heavy, beating rain soon after seeding was followed by hot, dry weather, baking a crust over the seeds. The plants were most of them more than two weeks breaking through this, and many of them perished without breaking the crust. From this cause the plants were uneven on the ground.

At the time of the second weeding the plants were thinned to eight inches, where there were enough to require thinning. They were harvested on the 14th and 15th of October. The total product of each variety was weighed separately, and the area of the plot carefully measured. In order to learn something of the possibilities of each variety under the same treatment a section two square rods in size was selected in each variety in such part of the plot as showed the best stand. The product of this portion of the plot was weighed separately, and the rate of yield per acre calculated.

TABLE VI.—VARIETY OF SUGAR BEETS AND MANGEL-WURZELS.

Plot number.	Variety.	Area—acre.	Total yield—pounds.	Rate of yield per acre—pounds.	Yield from two square rods—pounds.	Rate of yield per acre from two square rods—pounds.
1	Yellow Globe.....	.507	10,839	21,368	365	29,200
2	Lane's Imperial Sugar.....	.514	12,060	23,460	590	47,200
3	Golden Tankard .....	.517	12,315	23,820	665	53,200
4	Long Red .....	.468	13,751	29,380	875	70,000
5	Red Globe.....	.468	6,265	13,386	475	38,000
6	Yellow Ovid.....	.468	10,795	23,160	575	46,000

Table VI displays the area sown to each variety, the actual yield from this area and rate per acre, the yield from the selected two square rods and the corresponding rate of yield per acre. As shown by the table, with two exceptions, the rate of yield per acre of the whole plots was very uniform. The two exceptions present the two extremes in yields, the one being the least yield, produced by the Red Globe, and

the other being the greatest yield, produced by the Long Red. The Long Red also gave the largest yield from the selected two square rods, being at the rate of 35 tons per acre. The smallest rate of yield from two square rods was of the Yellow Globe, it being but little better from the selected part than upon the whole plot. The Long Red is the easiest to harvest, the greater part of the root being above ground. Lane's Imperial Sugar is mostly below the surface of the ground, and is the most difficult to pull out.

PRACTICAL HORTICULTURE.

Hon. L. B. Wing, Chairman Farm Committee:

DEAR SIR: I have the honor to submit herewith the annual report of the outdoor work of the department of horticulture, for the year ending November 1, 1887.

OBJECT OF THE GARDENS.

As has been stated heretofore, the primary object of the gardens as adjuncts to the department of botany and horticulture, is illustration and practical experience.

1. To do for the students of horticulture what the laboratory does for the students of chemistry, the machine shop for those in mechanical arts, or the hospital for the student of medicine and surgery. In other words, it is a place where the instruction of the class-room and text-book may find practical illustration.

2. By making the labor performed in the gardens in part remunerative as well as educational, thus enabling students who so desire, an opportunity to defray their expenses while acquiring an education.

The gardens then, are simply a means whereby students may become practically familiar with various horticultural operations. They afford opportunity to test the merits of different varieties of fruit, vegetables and ornamental plants, to show the effects of different methods of culture, and examples of general garden management.

As constituted at present this branch of the department of botany and horticulture presents at least five distinct means of illustration and practical experience. These are as follows: (1) *a vegetable garden*; (2) *a fruit garden*; (3) *nursery and forest-tree plantations*; (4) *propagating house and flower garden*; (5) *experimental grounds*.

The importance and necessity of these have already been pointed out in previous reports. I still maintain that in order to teach horticulture successfully, it must be treated as an *art, based on science*. Observation and practice must supplement the instruction of the class-room. Without a clear conception of the practical operations, the principles upon which they are based are not fully appreciated. Last spring all of the students in horticulture performed the operation of grafting. They prepared the cions, and with careful supervision did all of the work with their own hands. This course was taken in order to prepare them for a careful study of the scientific principles underlying the whole subject of propagation.

No one can learn how to bud, or graft, or prune trees and vines from lectures or books alone. Each student must perform these different operations for himself. It will be seen that illustrative and educational labor in this department covers a wide range of subjects. We have courses of study in *fruit culture* (embracing both the large and small fruits); in *vegetable gardening and seed growing*; in *arboriculture and forestry*; in *floriculture and landscape gardening*. It is the aim to supplement each o

these courses of study with some practice or laboratory work. More of practical work would have been undertaken if the students had more time at their command. As it is at present, the agricultural chemical laboratory in the forenoon, and the class-room work in agriculture in the afternoon, leaves little or no time for work in the gardens and orchard. This is an obstacle to the successful teaching of horticulture that ought to be removed. It is my desire to constantly use the gardens and orchards, and all the operations therein performed, for illustration, practical demonstration and training.

GENERAL STATEMENT.

The past season has not been a favorable one for fruit and vegetables here in central Ohio. The winter was comparatively mild. The temperature rarely fell to the zero point and the minimum record was only ten degrees below. Fruit of all kinds were uninjured and the early spring was rich in promise. The favorable weather throughout the spring months and extending to the beginning of summer, prolonged the expectations of a bountiful harvest, but the realization of our hopes was blasted by the intense heat and severe drouth that followed. I presume there have been summers fully as hot and dry as that of the present season, but I have seen nothing like it during the six years spent in Ohio.

For three months, counting from the 10th of June, nearly every day was a hot one, while the rainfall was equally infrequent and inadequate. As a general result the earth was parched and dry. Streams and ponds either dried up or shrunk to their lowest dimensions, and crops of nearly all kinds proved a disappointment to the hopes of the growers. Statistics show that the annual average product of Ohio is scarcely two-thirds of a full harvest.

The heat of the past summer was remarkable for its persistence as well as its intensity, while the drouth, though not peculiar for its early commencement, is noted for its extreme duration.

The maximum temperature which was reached about the middle of July was 102°.5, F., and the average for the months of June, July and August is unusually high. From the 9th of June until the 10th of November—a period of five months—the total rainfall here at the State University was only 6½ inches. This fierce and long-protracted drouth, together with the tropical heat, cut short the harvest of small fruit and caused an almost complete failure of most vegetable crops.

THE QUESTION OF IRRIGATION.

Such seasons as the past emphasize the fact that the most essential factor in crop production is soil-moisture. Our land was liberally fertilized, but the fertility of the soil was unavailable on account of the lack of soil-water.

The question of the best means of securing to garden crops a proper amount of moisture in time of drouth, is one of signal importance, and demands a practical solution.

We had a limited amount of water to use the past season, drawn from the water pipes which supply the main building. This was used to irrigate such vegetables as celery and other things that were especially in need of water, and enabled us to save, in part at least, some crops that would otherwise have proved total failures. A considerable portion of the garden situated directly west of the main building could be thoroughly irrigated at comparative small expense. The practicability of thus using an artificial water-supply ought to be tested upon a larger scale than the means at the command of the department has yet permitted. One hundred dollars would probably cover all the expense of irrigating the crops on an acre. I fully believe that in seasons like the past, this cost would be more than repaid in the in-

creased products of the land so treated. The horticultural department of the State University should take the lead in experimental tests of this character.

As our country is more and more denuded of its forest trees, drouths severer even than that of the past season may naturally be expected.

We ought, as far as possible, to prepare for, and provide against them.

SPECIAL WORK OF THE YEAR.

The work carried on in this department during the past year has been essentially the same in general character as that of former seasons.

The amount of strictly experimental work was considerably less than usual, owing to the financial condition of the experiment station. In certain directions the attempt was made to carry out on a larger scale than heretofore certain plans, which former experiments have indicated as likely to lead to good results.

In order to illustrate this point more fully, some portions of our work will be described somewhat in detail.

THE VEGETABLE GARDEN.

In this department nearly all of the garden vegetables usually grown for home use and market are cultivated. The best varieties are the most largely grown, but a long list of different sorts are planted for the purpose of comparison and study.

Celery.—This important garden crop requires a moist, rich soil, which can be secured here only by the liberal application of fertilizers, and by irrigation. In ordinary field culture the latter is often impracticable, but the plan we have followed for the past two or three years is one that can be safely recommended. The method in question is a modification of the trench system. A bed or trench about four feet in width is carefully prepared and thoroughly enriched with compost. A few inches of soil is thrown out, leaving the surface of the bed below the level of the adjoining ground. This is to facilitate the operation of flooding. The plants are set in rows one foot apart, and are placed at intervals of six inches in the rows. The rows run crosswise of the bed. The beds are flooded at frequent intervals, as occasion seems to require. The result is that the plants make a vigorous growth, and the product is exceedingly fine and tender, affording celery of the very best quality. This method is especially useful for private growers, and could in many cases be profitably employed by market gardeners. By selecting the variety known as the "White Plume," which, owing to its habit of growth, is well adapted for the purpose, but little banking up is required to complete the process of blanching. On this account the alleys or spaces between the beds need not occupy a width of more than two feet.

This close planting admits of more than double the number of plants usually grown upon a given area, while the labor of cultivation and management of the crop is decreased rather than otherwise. The results following this plan of growing several thousand plants the past season have been much more satisfactory than by the ordinary methods.

A new variety, "The Golden Self-Blanching," appears to be well adapted to this method of cultivation, but the quality is not equal to that of the "White Plume." Half Dwarf and Golden Heart are among the most satisfactory varieties we have tested.

Potatoes.—From experiments previously made with fertilizers it was clearly indicated that a commercial fertilizer, containing the principal elements of plant-food in about the proportion in which they are found in barn-yard manure, could be used with profit upon the soil of the vegetable garden. Accordingly half a ton

of Mapes' potatoe manure was applied to an acre in connection with farm yard manure, and an equal area was treated with manure alone.

The ground was thoroughly fitted by plowing twice and carefully harrowing.

The early growth was thrifty and vigorous, giving promise of a good crop. Heavy rains washed out many of the plants in some portions of the field, hence the results obtained were not strictly comparable. In another part of the field, however, on small plots, where the work was four times repeated, the results, in all cases, gave a favorable showing for commercial fertilizers as compared with barn-yard manure.

The results from the use of incomplete fertilizers were contradictory, hence unsatisfactory. The use of potash and nitrates in no case gave any decided gain. Superphosphate was beneficial in some cases but not in all. These experiments, which are given in detail in the station reports, have been conducted with great care, under the personal supervision of Mr. W. J. Green. They have been in progress for several years, but during this time no very satisfactory answer has been obtained to the important question, "What element, or elements of plant food, is lacking in our garden soil?"

Complete fertilizers, or those containing potash, nitrogen and phosphoric acid have in all cases given a decided gain in the crop.

Where these elements or simple compounds of plant-food were used separately the results have been contradictory.

The method employed in the work is somewhat different from that commonly practiced in plot experimentation, and the uniformity of the results obtained indicate that it is more reliable. It consists simply in increasing the number of unfertilized plots, so that each fertilized plot is surrounded on all sides, for purpose of comparison, with those receiving no treatment whatever. This diminishes the elements of error, and gives opportunity for an intelligent study of soil-varieties. By repeating in this way each experiment several times results have been obtained that may be regarded as reliable and trustworthy.

This method of plot experimentation with fertilizers shows the unreliability of the ordinary system of alternate unfertilized plots, and the utter untrustworthiness of having but one such in a series, as is too often the case. The experimental work with varieties of potatoes was on the usual scale, about one hundred and fifty sorts being on trial. None of the new varieties excel the Early Ohio as an early market sort. The varieties that have given the best general results are Early Albino, Early Standard, Charles Downing and Summit.

Cabbage.—Nearly an acre was devoted to this crop, but owing to the drouth the yield was extremely light. In no vegetable is the necessity of careful selection more apparent than in this, and there is probably no other where this has been carried on to a greater extent. This makes the comparison and study of different strains or varieties an important matter.

The tests made here upon our experimental grounds clearly show that there are but few actual synonyms among the long list of varieties of cabbage.

It is often the case that where no structural differences appear between varieties marked contrasts occur in the crop. As illustrations may be cited, the fact that out of twenty or more strains of Flat Dutch, not five can be depended upon to produce a satisfactory harvest.

Thus far the attempt to describe each strain in distinct terms has not been successful. Other varieties furnish equally as good examples of hereditary qualities that are not visible in the growing crop, but show unmistakably at or near the time of maturity.

No work undertaken in the experiment grounds of this department gives greater promise of usefulness than the comparison of varieties and strains of

varieties of garden vegetables. To accomplish the best results this work needs to be undertaken on a larger scale. In this, as in many other things, the horticultural department of the University and the experiment station can co-operate to the decided advantage of both.

Flat Dutch cabbage from Livingston, Landreth and Henderson; Early Wakefield from Brill, Harris and Vick; Early Summer from various sources; and Louisville Drumhead have proved to be the most satisfactory of nearly three hundred samples that have been tested.

Other Vegetables.—Work of a somewhat similar nature to that already described has been carried on with nearly all the more common forms of garden vegetables.

Lack of space and means have necessitated a restriction of the areas devoted to those of minor importance. A complete summary of this work will be given in the forthcoming station report.

It should be mentioned in this connection that the opportunities afforded for the study of varieties are unexcelled.

The question of what varieties to plant is one of the most important, as well as the most difficult, with which the professional gardener has to deal. It is also equally interesting and important to the amateur.

THE FRUIT GARDEN.

The area devoted to fruit is about the same as has been described in previous reports. Heretofore the fruit garden has given the larger part of the income of the department. Last season, owing to the severe drouth, and other causes, the receipts from this source were greatly lessened.

Strawberries.—Soon after the period of fruiting was past, during the season of 1886, it was discovered that the strawberry plants, in all of the beds, were seriously affected by some insects which were preying upon the roots of the plants. Later in the season these insects were identified as *Paria anterrima* and *Graphops pubescens*, two closely allied species of very destructive character. These insects are commonly known as "Strawberry root-worms." They had not been previously observed in this locality. In three of the older strawberry beds the destruction was almost complete. Those planted in the spring of 1886 were injured but little, while one bed planted during the fall of that year escaped with no injury. This gave a hint which was acted upon the present season. The old beds were all plowed under and new ones planted during the spring and late summer. The success of what is known as fall planting depends almost wholly upon its being done during the latter half of the month of July. In order to get plants in good condition for transplanting at this early date, the runners were taken before they had rooted and were planted closely in a bed where they were kept well watered and partially shaded. Within a month they were ready to transplant. Notwithstanding the extreme dry weather of the past fall, these plants have made sufficient growth to give promise of a fair crop the coming season. It is possible by this method to circumvent the "root-worm," also some other enemies of the strawberry. In seasons having the normal amount of rainfall the growth of the plants will be sufficient to produce a good crop the following season. This method is especially applicable where it is desired to occupy the ground with early vegetables the first part of the season, or with a late crop after fruiting. The most desirable varieties for home use, thus far tested, are Sharpless, Cumberland Triumph, Charles Downing and Miner's Prolific. For market the Crescent, Champion, Sharpless, May King and Miner's Prolific are among the best.

The most promising new sorts are Jessie, Crawford, Bubach, Surprise and Summit.

Raspberries.—About one hundred each of red and black varieties are cultivate

Early in the season the promise of a full crop was unusually good. Our expectations were not realized, however, for the crop was cut short by drouth, and a large share of the fruit which came to perfection was eaten by the birds, which were unusually abundant.

The attempt to frighten them away was only partially successful, and it is probable that they took one-half of the crop. This was especially the case with the fruit on specimen plants of new varieties, which in many cases were somewhat isolated from other plants. The plantations, both old and young, are now in good condition. The varieties that have proven most profitable are Turner, Shaffer's Colossal, Reliance, Gregg, Tyler & Ohio.

Of the promising new sorts Hilborn and Golden Queen are worthy of mention.

Gooseberries and Currants.—These are in fair condition. The former yielding a large and profitable crop the past season. It has been the custom in former years to apply white hellebore, in the form of a powder, in order to destroy the currant worms. This was usually effectual, but in some cases it was washed off by the rain soon after being applied, and at times it was often necessary to wait a day or two for a favorable opportunity to make another application. This gave the worms a chance to work, and frequently much damage was done. Using the hellebore in the form of a solution did not prove effectual, mainly because no suitable spraying apparatus was at hand. At all events none was tried that did the work satisfactorily. The past season a force-pump and nozzle, invented by Mr. C. H. Nixon, of Dayton, has been used. This proved to be entirely satisfactory. The work has been done better than ever before, and at less expense.

Such a machine would be a profitable investment for the department, as it can be used for spraying trees and plants of all kinds.

Cherry Orchard.—This is in good condition, and bore a fair crop. As the orchard was originally planted it contained several varieties of both the sweet and sour class. Nearly all the trees of this planting have died, except the Early Richmond.

The vacancies were replanted, and the orchard somewhat extended last spring. The varieties used for this purpose are mainly of the newer sorts. They will be carefully treated, and their merits thoroughly tested and reported upon in due time. This collection of cherry trees was donated through the kindness of Mr. S. D. Bear, of the Heike's Nursery Company, of Dayton, Ohio.

Quince Orchard.—This is in good condition, and some of the trees or bushes bore for the first time.

Vineyard.—The grape vines bore a fairly good crop, but very little of the fruit was saved by the department.

Large quantities were stolen, and a large proportion of what remained was injured or destroyed by the birds.

A new vineyard, containing varieties for trial, has been planted.

Apple Orchard.—As stated in previous reports, the trees have been seriously injured by the severe cold of the past winters. Some have been replaced and others have partially recovered.

Some of the trees bore a partial crop, especially those that were sprayed with arsenites. Trees not so treated bloomed, but nearly all of the fruit dropped before it reached maturity.

Some of the trees have been top-grafted with new varieties for trial.

It is proposed to carry on the same plan with nearly all of the remaining trees, inserting a graft or two each of several varieties on a tree.

The orchard covers more space than is necessary for an experimental and

illustrative one. A portion of the trees will be removed as the land is needed for other purposes.

Pear Orchard.—The vacancies caused by the cold winter of 1884 have been filled. This required 108 trees in all.

Grafts of some of the most promising new varieties have been inserted in the tops of some of the most healthy trees. The orchard bore a fair crop of fruit the past season, but the quality was very imperfect, being seriously injured by the punctures of the curculio.

Most of the trees are now in satisfactory condition. Forty varieties ought to yield some fruit next season.

INVESTIGATION OF PEACH YELLOWS.

At the urgent request Mr. E. F. Smith, who has been appointed a special agent by the U. S. Department of Agriculture to investigate and make a report upon the "yellows" of the peach, the department has consented to co-operate in the investigations. We already have a collection of pits and expect to conduct the following experiments the coming season :

1. To grow several hundred peach trees from the pits of premature peaches, and determine what per cent. of such trees, if any, develop "the yellows."
2. To bud young peach trees (100 or more) with buds taken from trees which have the "yellows" and determine what per cent., if any, afterwards show the disease.

A great step will be gained if the question of transmissibility of "yellows" can be definitely settled pro or con. The statement that "yellows" is spread both by budding and by use of diseased pits, is made without qualification by many, and is as unqualifiedly denied by others. It is a question susceptible of proof. If peach "yellows" can be spread in the ways mentioned above, it ought to be established beyond question.

NURSERY AND FOREST-TREE PLANTATIONS.

We have had no means to extend the work in this important division during the past season, and very little can be added to the report of last year.

During the past two years we have been testing the vitality of the seeds of different forest-trees obtained from various sources. This work is still in progress and no report will now be made. The results thus far obtained are quite interesting, and show that a very large proportion of the tree seeds sold by dealers are worthless.

REPORT ON HEDGES.

In the spring of 1883 a few hundred plants of the Osage Orange were set out, in order to test the best method of making and managing a hedge formed of this well-known plant. The plants were one year old and were trimmed back so as to leave a stem of from three to four inches above the ground. One-third of the plants were placed in a single row, six inches apart, one-third in a single row, nine inches apart, and the remaining third in a double row, twelve inches between the plants and nine inches between the rows. In forming this double row the same number of plants were used as in the first mentioned single row. The hedge rows were kept free from weeds and the ground was well cultivated until the first of September. The plants made a fairly good growth, and there were few failures. About one year from the date of planting, one-half of each row was cut off at the surface of the ground. The remaining half was cut back from one-half to two-thirds of the year's growth. The portion that was cut to the ground threw out numerous shoots which were cut

back about the first of July to within six inches of the old cutting. In September they were again trimmed to within six inches of the previous cutting. Since then the hedge has been trimmed twice each year, and is now about three feet high, firm, compact and solid. Little or no side trimming has yet been done, but this will be attended to the coming year. The portion of the hedge not cut back to the ground has done well, but is by no means as compact as the half rows so treated.

In this climate, when properly managed, the Osage Orange appears to be almost an ideal hedge plant. It has at least the following requisites:

1. A good barrier against all kinds of stock.
2. Hardy, and of vigorous, thrifty growth.
3. Easily pruned and trained.
4. Long lived and not subject to injury from disease or insects.

Despite these advantages the use of the Osage Orange as a hedge plant by the ordinary farmer is of doubtful economy. A large majority of the hedges seen in Ohio can justly be regarded as a nuisance to the farms upon which they are growing. They are too troublesome and too costly for the average farmer.

The causes of failure are not hard to find. In the first place there are comparatively few men in the state who have any clear conception of the care and skill necessary in order to establish and maintain a good hedge. Too many are of the opinion that a hedge, after once planted, ought to cost little or nothing. This idea has been ruinous in its effects and has done much to check the successful establishment of hedges in this country.

It is the desire and intention of the horticultural department, as soon as it has means at command, to make a thorough test of the comparative value of the following hedge plants: Osage Orange, Honey Locust, Buckthorn, English Hawthorn, American Cockspur Thorn, American Crab Apple, and a few others.

EVERGREEN HEDGES.

One year ago the past spring an evergreen hedge of about one hundred rods in length was planted on the eastern boundary of the fruit and vegetable gardens. Three varieties of evergreens were used, viz.: Arbor-vitæ, hemlock spruce, and Norway spruce. The plants were three years old and were set three feet apart in a carefully prepared hedge-row, about an equal space being devoted to each variety. The arbor-vitæ and Norway spruce have made a good growth, and scarcely a single plant of either has failed. The hemlock stands between a row of pear trees on one side and shade trees on the other, and did as well as could be expected under the circumstances. There is no doubt that each of the above-named varieties of evergreen are admirably adapted for a low, neatly trimmed lawn or garden hedge. Time alone will tell which of the three varieties subserve the purpose best.

THE NORWAY SPRUCE AS A SHELTER OR WIND BREAK.

Eight years ago a double row of Norway spruce was planted on the north and west sides of the University fruit and vegetable garden. These evergreens were placed fifteen feet apart, alternating in the two rows, while the distance between the rows was eight feet. They have made a very luxuriant growth and now form an almost unbroken wall of green. As the five or six acres of level garden would, without this protection, be fully exposed to the mercy of our cold, biting north and west winds, this shelter which cost but a trifle, has a value not easily estimated.

The only labor bestowed upon this belt of evergreens during the past six years has been to occasionally prune a too ambitious side branch and to cut back, now and then, a leader where there was a tendency to grow too tall.

For several years these rapidly growing trees have sensibly modified the harsh-

ness of our climate and have afforded some measure of protection to many a tender plant. Nothing connected with the management of the garden has proved of equal advantage and economy. In addition to the shelter afforded, they encourage the birds, and, in winter, at least, are strikingly ornamental.

We cannot too strongly urge the planting of evergreens. They should be used not merely as an ornamental drapery to buildings, but as mollifiers of our changeable climate and economizers of animal food and plant life.

EXPERIMENTS WITH INSECTICIDES.

During the fall and spring terms of the last college year the students in horticulture had an excellent opportunity to watch the results of a series of careful tests to determine the value of different insecticides. These tests were made for the most part in the University gardens, under the direction of Mr. W. B. Alwood, special agent of the entomological division of the U. S. department of agriculture.

IMPROVEMENTS AND NEEDS.

Little has been accomplished or attempted in the way of permanent improvements, for the simple reason that we had no means wherewith to make them.

A wire fence was built along the east side of the fruit garden, and proved useful in keeping out a certain class of trespassers. Those who came to steal fruit at night found no difficulty in getting around it. A stronger and higher fence is needed around the entire garden. This would stop much of the trespassing that now occurs in the day time by those passing to and from the river.

The horticultural department has but one horse at its disposal. This is not sufficient to do the work at all times, and in consequence there are delays that are equally costly and annoying. With two horses the plan of supplying private families with fruit and vegetables, daily, could be carried out.

A new forcing-house is also needed. With this addition the garden would afford profitable employment to a good man the year round, and would increase the opportunity for student labor.

An appropriation of \$750 would supply the three urgent needs mentioned, viz. : the wire fence, a good horse, and a forcing-house. Without these our work is seriously crippled, and we cannot compete with similar departments in other institutions.

For the past two years this department has had no means at its disposal, save what it received for the sale of products. Such being the case, no elaborate experiments could be inaugurated, nor could much be done for the sake of appearance.

ACKNOWLEDGMENTS.

The measure of success that has attended the work in this department is very largely due to the ability and faithfulness of Mr. W. J. Green. I desire to renew former expressions of appreciation. The department is also indebted to Mr. W. S. Devol, superintendent of the farm, for ready and cheerful assistance. We are also gratified with the cordial co-operation and sympathy of many of the most earnest and intelligent horticulturists of the State.

From all such we welcome communications, and solicit counsel and suggestions.

STATEMENT OF THE RECEIPTS AND DISBURSEMENTS OF THE HORTICULTURAL DEPARTMENT OF THE OHIO STATE UNIVERSITY FOR THE YEAR ENDING NOVEMBER 15, 1887.

Receipts.

Balance on hand	\$9 18
Strawberries sold	188 48
Raspberries sold.....	269 85
Other fruits sold.....	60 50
Vegetables sold	260 81
Plants sold	50 52
Miscellaneous	1 00
<hr/>	
Total.....	\$840 34

Disbursements.

Labor.	\$713 28
Implements, tools, etc	9 36
Fertilizers.....	20 25
Repairing, etc	26 74
Printing, stationery and postage	3 00
Trees	18 00
Seeds	37 45
Berry crates and boxes	10 50
Freight	1 50
<hr/>	
Total.....	\$840 08
<hr/>	
Balance on hand	\$0 26

Respectfully submitted.

WILLIAM R. LAZENBY.

TREASURER'S REPORT.

COLUMBUS, OHIO, November 15, 1887.

To the Honorable LUCIUS B. WING, *President Board of Trustees of the Ohio State University*:

SIR: I herewith submit my report for the fiscal year ending this 15th day of November, 1887. The report includes the following statements:

- I. Recapitulation.
- II. Statement of the endowment fund, held by the State of Ohio, the income from which is pledged to the support and maintainance of the University.
- III. Statement of Virginia military land fund.
- IV. Detailed statement of cash receipts during current fiscal year.
- V. Detailed statement of cash disbursements during current fiscal year.
- VI. Statement of appropriations made by the board of trustees, and a list of professors, officers and employes, with the salaries of each.

Respectfully,

F. W. PRENTISS, *Treasurer*.

STATEMENT I.

RECAPITULATION.

F. W. PRENTISS, *Treasurer, in account with Ohio State University*:

	Dr.
To balance, cash on hand as per my report of 1885-6	\$11,336 73
To Ohio State Treasury	32,270 48
On account of interest on endowment fund, maturing 1st January, '87.....	\$5,000 00
Balance on account of same, maturing 1st Jan., '87.....	6,135 24
On account of same, maturing 1st July, '87	5,000 00
On account of same, maturing 1st July, '87.....	5,000 00
Balance on account of same, maturing 1st July, '87.....	6,135 24
On account of same, maturing 1st January, '88	5,000 00
To term fees from students.....	5,864 90
Balance term fees, fall term, 1886	\$22 00
Winter " 1886-7	1,987 40
Spring " 1887	1,756 00
Fall " 1887.....	2,099 50
To rents—Ohio State University residences.....	1,950 00

W. H. Scott, President.....	\$385.00	
George W. Knight, Professor.....	375 00	
A. H. Tuttle, ".....	47 50	
Benj. F. Thomas, ".....	425 00	
N. S. Townshend, ".....	600 00	
W. J. Green, superintendent gardens.....	117.50	
To Virginia military land sales		3,041 42
Cash payments, payments on notes and interest.		
To miscellaneous receipts.....		173 28
Sundry sources, as per statement IV.		
		<u>\$54,636 81</u>

F. W. PRENTISS, *Treasurer, in account with Ohio State University:*

		Cr.
By cash		\$47,197 19
Paid faculty, teachers and officials.....	\$34,251 63	
" on account of expenses board of trustees.....	48 90	
" " " fuel and care of buildings.....	990 41	
" " " department supplies.....	3,027 36	
" " " exp. attending farmers' institutes..	215 58	
" " " general repairs	3,860 79	
" " " other current expenses	4,802 52	
To balance—cash in hands of treasurer this day.....		7,439.62
		<u>\$54,636.81</u>

STATEMENT II.

STATEMENT OF THE ENDOWMENT FUND IN ACCORDANCE WITH THE PROVISIONS OF AN ACT
PASSED FEBRUARY 10, 1870, O. L., VOL. 67, SECTIONS 8433 AND 8446, R. S.

The principal of the endowment fund is \$537,841 46
And constitutes, to that extent, a portion of the "irreducible debt" of
the state of Ohio, upon which the said state pays interest at rate of
6 per cent. per annum—semi-annual rests—and which amounts to.. 32,270.48

STATEMENT III.

VIRGINIA MILITARY LAND SALES.

Net cash receipts from November 15, 1886, as per my report 1885-6, page 72.....	\$38,546 19
Cash receipts during fiscal year 1886-7.....	3,041 42
Net cash receipts to November 15, 1887.....	<u>\$41,587 61</u>

NOTE.—\$13,665.84 of these receipts have been paid into the Ohio state treasury to the credit of the endowment fund, the remainder having been added to the current funds and applied to the building of new residences for professors, and as otherwise directed by board of trustees.

STATEMENT IV.

DETAILED STATEMENT OF RECEIPTS, BY F. W. PRENTISS, TREASURER, DURING FISCAL YEAR ENDING NOVEMBER 15, 1887.

Date.	From whom received.	On account of—	Amount.
1886.			
Nov. 16	To balance	As per my report 1885-6	\$11,336 73
Dec. 10	Geo. W. Knight	3d installment rent '86-7.....	37 50
	A. H. Tuttle	3d " "	47 50
	W. H. Scott	3d " "	38 50
	Benj. F. Thomas.....	3d " "	42 50
	Alexis Cope, secretary	Int. Wm. G. Beekman, 1 year note to July 22, '86	\$26 56
	" "	Int. Wm. G. Beekman, 2 year note to July 22, '86.....	26 56
	" "	Payment Wm. G. Beekman, 1 year note, due 22d July, 1875	16 22
			69 34
22	State Treasury.....	Being on account of interest on endowment fund due 1st Jan. '87	5,000 00
27	"	Being balance on acct. of int. on endowment fund to Jan. 1, '87..	6,135 24
	Geo. W. Knight	4th installment rent '86-7.....	37 50
	W. H. Scott	4th " "	38 50
	Benj. F. Thomas.....	4th " "	42 50
1887.			
Jan. 14	D. P. McChesney, assignee	Notes of J. A. McMurray	94 75
	Samuel Kendrick	Cash payment for Virginia mili- tary lands.....	1,711 35
	State Treasury.....	Being on account of interest on en- dowment fund, due July 1, '87..	5,000 00
March 1	Benj. F. Thomas.....	5th installment rent, '86-7.....	42 50
	S. W. Robinson.....	Sale of old iron.....	11 26
	W. H. Scott.....	5th installment rent, '86-7.....	38 50
	Alexis Cope, secretary	Notes J. A. English, 2, 3, 4 & 5 years, at \$33.05 each..	\$132 20
	" "	Int. J. A. English, 2, 3, 4 & 5 years, at \$33.05 each.....	49 95
			182 15
	Geo. W. Knight.....	5th and 6th installment rent, '86-7	75 00
	Benj. F. Thomas	6th " "	42 50
	W. H. Scott.....	6th " "	38 50
	W. J. Green.....	Rent farm-house from Feb. 7th to 28, '87.....	7 50
April 1	S. W. Robinson	Sale of old iron.....	75
	H. A. Weber	Rent farm-house, Nov. and Dec., '86, and January, '87.....	30 00
	Benj. F. Thomas.....	7th installment rent, '86-7.....	42 50
	W. H. Scott.....	7th " "	38 50
	E. A. Legg	Balance due on parts lots 8 and 9, Pike county	38 00
	Alexis Cope, barsar.....	Balance term fees, fall term, '86 ... Winter term bills, 1886-7:	22 00
	" "	Incidentals	\$1,408 00
	" "	Chemical laboratory fees..	220 00
	" "	Agricultural chemical lab- oratory fees.....	96 00
	" "	Physical laboratory fees..	89 00
	" "	Mechanical " " ..	60 00
	" "	Physical " " ..	40 00

STATEMENT IV—Continued.

Date.	From whom received.	On account of—	Amount.
1887.			
April 1	Alexis Cope, bursar.....	Mining laboratory fees..... 28 00	
	" "	Pharmacy " " 38 40	
	" "	Botanical " " 8 00	
			\$1,987 40
May 3	State Treasury.....	Being on account of interest on endowment fund, due July 1, '87	5,000 00
	N. S. Townshend	Rent, year ending May 4, '87.....	300 00
	Benj. F. Thomas	8th installment rent, '86-7.....	42 50
	W. H. Scott.....	8th " "	38 50
	Geo. W. Knight.....	7th " "	37 50
	W. J. Green	Rent farm-house, March, '87	10 00
June 17	Alexis Cope, bursar.....	Spring term bills, 1887:	
	" "	Incidentals .....\$1,260 00	
	" "	Chemical laboratory fees.. 200 00	
	" "	Physical " " .. 91 00	
	" "	Agr'l chem'l " " .. 64 00	
	" "	Mechanical " " .. 55 00	
	" "	Pharmacy " " .. 40 00	
	" "	Physiological " " .. 35 00	
	" "	Botanical " " .. 2 00	
	" "	Stall rent, etc..... 9 00	
			1,756 00
	Benj. F. Thomas.....	9th installment rent, 1886-7.....	42 50
	George W. Knight.....	8th " "	37 50
	W. H. Scott.....	9th " "	38 50
	W. J. Green.....	Rent farm-house, April, 1887.....	10 00
30	State Treasury.....	Being balance on account of interest on endowment fund to July 1, 1887	6,135 24
	N. S. Townshend.....	Rent, year ending May 4, 1886....	300 00
	S. A. Norton.....	Supplies sold students chem. dep't	127 40
	Benj. F. Thomas.....	10th installment rent, 1886-7..	42 50
	Geo. W. Knight.....	9th " "	37 50
Sept. 1	State Treasury.....	Being on account interest on endowment fund due Jan. 1, 1888..	5,000 00
Oct. 26	W. H. Scott.....	10th installment rent, 1886-7..	38 50
	W. J. Green.....	Rent farm-house, May and June, '87	20 00
	Geo. W. Knight.....	10th installment rent, 1886-7.....	37 50
	Alexis Cope, secretary....	Payment H. W. Overman's notes..	100 00
	W. H. Scott.....	Postage stamps sold students.....	13 87
	W. J. Green.....	Rent farm-house, July and Aug., '87	20 00
	Geo. W. Knight.....	1st installment rent, 1887-8... ..	37 50
	Benj. F. Thomas.....	1st " "	42 50
	W. J. Green.....	Rent farm-house, September, 1887	10 00
	Alexis Cope, secretary....	Payment W. R. Walker's notes....	79 33
	Johnson Spence.....	Purchase money discovery No. 54 (sub-div. 2), Scioto county	80 00
	Stephen Fisk	Part purchase money discovery No. 116, Adams county	300 00
	Samuel Kendrick.....	On account of discovery No. 54....	150 00
Nov. 15	Alexis Cope, bursar.....	Fall term bills, 1887:	
	" "	Incidentals .....\$1,612 50	
	" "	Chemical laboratory fees 120 00	
	" "	Agr'l chemical " " 128 00	
	" "	Physical " " 133 00	
	" "	Mechanical " " 60 00	
	" "	Physiological " " 40 00	
	" "	Botanical " " 4 00	
	" "	Stall rent..... 2 00	
			2,099 50

STATEMENT—Concluded.

Date.	From whom received.	On account of—	Amount.
1887. Nov. 15	Geo. W. Knight.....	2d installment rent, 1887-8.....	\$37 50
	W. H. Scott.....	1st and 2d installment rent, 1887-8	77 00
	Benj. F. Thomas.....	2d " "	42 50
	W. J. Green.....	Rent farm-house, October, 1887....	10 00
	Chas. Kilbourne.....	Sale of old iron.....	20 00
	Samuel Kendrick.....	Balance for discovery No. 54.....	236 50
			<hr/> \$54,636 81

STATEMENT V.

DETAILED STATEMENT OF DISBURSEMENTS, BY F. W. PRENTISS, TREASURER, DURING
FISCAL YEAR ENDING NOVEMBER 15, 1887.

Date.	To whom paid.	For what purpose.	No.	Amount.
1886. Nov. 27	Wm. Fish & Son.....	Stone-work repairing tower..	1	\$1,365 00
	W. H. Scott.....	Salary Nov., '86, installment	2	300 00
	Edward Orton.....	" "	3	225 00
	S. A. Norton.....	" "	4	225 00
	N. S. Townshend.....	" "	5	225 00
	A. H. Tuttle.....	" "	6	225 00
	S. W. Robinson.....	" "	7	225 00
	N. W. Lord.....	" "	8	100 00
	S. C. Derby.....	" "	9	225 00
	Wm. R. Lazenby.....	" "	10	225 00
	J. R. Smith.....	" "	11	225 00
	B. F. Thomas.....	" "	12	225 00
	H. A. Weber.....	" "	13	225 00
	Clara Fisher.....	" "	14	15 00
	Geo. C. Comstock.....	" "	15	225 00
	Geo. W. Knight.....	" "	16	225 00
	H. J. Detmers.....	" "	17	120 00
	A. P. Blocksom.....	" "	18	50 00
	C. N. Brown.....	" "	19	140 00
	Alice K. Williams.....	" "	20	100 00
	E. A. Eggers.....	" "	21	120 00
	Geo. B. Kauffman.....	" "	22	40 00
	David O'Brine..	" "	23	100 00
	Geo. W. McCoard.....	" "	24	120 00
	Jos. N. Bradford.....	" "	25	100 00
	A. H. Welsh.....	" "	26	120 00
	Benj. W. Snow.....	" "	27	80 00
	Vernon J. Emery.....	" "	28	12 50
	Alexis Cope.....	Salary to Dec. 1, 1886.....	29	104 16
	F. W. Prentiss.....	" ".....	30	29 17
	Pedrick & Ferris.....	Brick-work repairing tower..	31	1,015 00
	Chas. A. Barton.....	Bal. due as agent Virginia military lands.....	32	145 60
Dec. 1	D. Y. Murdock.....	Advertising University M.E. Conference.....	33	6 00
	The Edwin Alden & Co..	Advertising University.....	34	212 89

STATEMENT V—Continued.

Date.	To whom paid.	For what purpose.	No.	Amount.
1886.				
Dec. 1	R. O. Smith & Co	204 feet $\frac{1}{4}$ round.....	35	\$2 28
	Columbus Bolt Works.....	4 iron rods to order.....	36	6 00
	Col. Electric Supply Co...	Supplies chemical dept.....	37	17 65
	Col. Brass & Steam P. Wks.	" mechanical dept...	38	19 80
	S. W. Robinson..... ..	" " " ..	39	30 18
	Seth L. Hayes.....	" military " ..	40	9 85
	H. T. Stephens..	" " " ..	41	2 88
6	Columbus post-office.....	500 2c stamps, etc., for sec'y..	42	12 00
7	W. S. Devol... ..	Salary to December 1, 1886..	43	50 00
10	A. H. Smythe.....	Supplies, stationery.....	44	2 80
	Geo. F. Wheeler.....	Soap and matches.. ..	45	4 80
	Siebert & Lilley.....	One order book.....	46	10 75
	W. U. Telegraph Co.....	Messages	47	1 89
	Seth L. Hayes.....	Care arms during fall term '86	48	5 00
	P. G. Hall.. ..	Bal. on band instruments.....	49	50 00
	"	Supplies zoological dep't.....	50	2 50
	Chas. Huston.	" "	51	3 55
	Wm. G. Dunn & Co.....	" "	52	5 80
	The Educat'al Supply Co..	" "	53	13 52
	Geo. M. Maris & Co.....	" "	54	60
	F. O. Jacobs.....	" "	55	14 00
	Senter & Lerch	" "	56	14 00
	A. H. Tuttle.....	" "	57	14 23
	N. W. Lord	Supplies mining department	58	17 70
	M. F. Capron.....	Repairs physical dep't.....	59	1 45
	Braun & Bruck.....	Supplies " "	60	8 77
	Jas. W. Queen & Co.....	" " "	61	392 85
	Kauffman, Lattimer & Co.	" " "	62	15 58
	Jas. W. Queen & Co.....	" " "	63	269 07
	M. F. Capron	Repairs on building	64	6 03
	E. O. Randall & Co.....	" Prof. Thomas' res....	65	15 00
	Val. Loewer.....	4 walnut tables.....	66	20 50
	Thos. B. Hunt.....	General rep'g., 91 hrs., @ 25c.	67	25 15
	Chas. Wheeler.. ..	" dormitory.....	68	82 15
	Jas. G. Pulling & Co.....	" ste'm heating	69	9 15
	Col. Brass & Steam P. Wks.	" "	70	9 25
	Clara Fisher.....	Term fees refunded by order		
		trustees	71	5 00
	J. P. Hine.....	Term fees refunded by order		
		trustees	72	5 00
	O. F. Brashears	Term fees refunded by order		
		trustees	73	5 00
	S. Humphreys.....	Term fees refunded by order		
		trustees	74	5 00
	Mark Francis	Term fees refunded by order		
		trustees	75	8 00
18	Wm. H. Scott.....	Salary Dec. 1, '86, installment	76	300 00
	Edward Orton.....	" "	77	225 00
	S. A. Norton.....	" "	78	225 00
	N. S. Townshend.....	" "	79	225 00
	A. H. Tuttle.....	" "	80	225 00
	S. W. Robinson	" "	81	225 00
	N. W. Lord.....	" "	82	100 00
	Samuel C. Derby.....	" "	83	225 00
	W. R. Lazenby.....	" "	84	225 00
	J. R. Smith.....	" "	85	225 00
	H. A. Weber	" "	86	225 00
	B. F. Thomas.....	" "	87	225 00
	Geo. C. Comstock	" "	88	225 00

STATEMENT V—Continued.

Date.	To whom paid.	For what purpose.	No.	Amount.
1887.				
Jan. 19	Chas. S. Fay	2 acknowledgments Vir- ginia military land deeds..	143	\$ 80
	W. U. Telegraph Co.....	Telegrams.....	144	35
	Cen'l Union Telephone Co	2 installments quarter end'g Apr. 1, '87, use toll lines, \$1.25	145	26 25
	W. H. Scott.....	Repairs at residence of pres.	146	4 00
	M. F. Capron	82 hours physical dep't.....	147	18 45
	Aston & Huff.....	Supplies "	148	2 25
	Seth Hayes.....	Repairs arms and equipm't..	149	7 73
	W. R. Lazenby	Expenses att'g farmers' inst..	150	19 40
	A. H. Smythe	Record school of engineer'g..	151	90
	B. & O. Express Co.....	Freight on reports	152	2 50
	W. H. Hannum.....	Copying records phys'l dept..	153	5 40
	H. D. Bishop	27½ hours' work " ..	154	5 50
	A. H. Tuttle	Supplies physical dept	155	7 62
22	Columbus post-office.....	1 M 5-c. stamps, 500 2-c. stamps	156	60 00
	P. F. Brashears.....	Balance due on laboratory...	157	3 00
	Eimer and Amend.....	Supplies chemical dep't.....	158	8 29
29	N. W. Lord.....	Salary Jan., '87, installment..	159	100 00
	David O'Brine.....	" " " ..	160	100 00
	A. H. Welsh.....	" " " ..	161	120 00
	F. W. Printiss	" to February 1, '87.....	162	25 00
	Alexis Cope	" " "	163	108 33
	W. H. Scott.....	" Jan., '87, installment..	164	300 00
	S. A. Norton	" " " ..	165	225 00
	H. A. Weber	" " " ..	166	225 00
	C. Newton Brown.....	" " " ..	167	140 00
	Edward Orton	" " " ..	168	225 00
	A. H. Tuttle	" " " ..	169	225 00
	J. N. Bradford	" " " ..	170	100 00
	E. Eggers.....	" " " ..	171	120 00
	H. J. Detmers	" " " ..	172	120 00
	Geo. C. Comstock	" " " ..	173	225 00
	Geo. W. McCoard	" " " ..	174	120 00
Jan. 29	Geo. W. Knight	" " " ..	175	225 00
	J. R. Smith.....	" " " ..	176	225 00
	Alice K. Williams	" " " ..	177	100 00
	Benj. W. Snow.....	" " " ..	178	80 00
	W. R. Lazenby	" " " ..	179	225 00
	Benj. F. Thomas	" " " ..	180	225 00
	S. W. Robinson	" " " ..	181	225 00
	W. S. Devol	" " " ..	182	50 00
	A. P. Blocksom	" " " ..	183	50 00
31	W. J. Green	Salary Nov. and Dec., '86, and Jan., '87.....	184	75 00
Feb. 4	S. C. Derby.....	Salary Jan., '87, installment..	185	225 00
	C. G. Newton	30½ hours' carpenter work...	186	5 34
5	N. S. Townshend	Salary Jan., '87, installment..	187	225 00
	Geo. B. Kauffman	" " " ..	188	80 00
11	Washington Townsend.....	" to Feb., '87.....	189	39 00
12	Anna Neill Scott.....	" Jan., '87, installment...	190	15 00
21	Vernon J. Emery	" " " ..	191	12 50
26	W. H. Scott	" Feb., '87, " ..	192	300 00
	E. Orton	" " " ..	193	225 00
	S. A. Norton	" " " ..	194	225 00
	N. S. Townshend	" " " ..	195	225 00
	A. H. Tuttle	" " " ..	196	225 00
	S. W. Robinson.....	" " " ..	197	225 00

STATEMENT V—Continued.

Date.	To whom paid.	For what purpose.	No.	Amount.
1887.				
Feb. 26	N. W. Lord.....	Salary Feb., '87, installment..	198	\$100 00
	S. C. Derby.....	" " " ..	199	225 00
	W. R. Lazenby	" " " ..	200	225 00
	J. R. Smith	" " " ..	201	225 00
	H. A. Weber	" " " ..	202	225 00
	J. N. Bradford.....	" " " ..	203	100 00
	Geo. W. Knight	" " " ..	204	225 00
	Geo. C. Comstock	" " " ..	205	225 00
	Geo. W. McCoard.....	" " " ..	206	120 00
	B. F. Thomas.....	" " " ..	207	225 00
	Benj. W. Snow	" " " ..	208	80 00
	Alexis Cope	Salary to March, '87	209	108 33
	E. A. Eggers.....	" Feb., '87, installment..	210	120 00
	H. J. Detmers	" " " ..	211	120 00
	V. J. Emery.....	" " " ..	212	12 50
	Alice K. Williams.....	" " " ..	213	100 00
	A. H. Welsh.....	" " " ..	214	120 00
28	W. S. Devol	" " " ..	215	50 00
	A. P. Blocksom	" " " ..	216	50 00
	C. Newton Brown.....	" " " ..	217	140 00
	Anna Neill Scott.....	" " " ..	218	15 00
	W. J. Green	" to March, '87	219	25 00
March 1	F. W. Prentiss.....	" " " ..	220	25 00
	E. C. Grove.....	" " " ..	221	33 33
	C. G. Newton	5 hours' carpenter work.....	222	87
	The Columbus Record.....	Advertising clinic	223	10 00
4	E. Cook & Bros	100 copies Evening Dispatch	224	3 00
	Comly & Co	30 copies Toledo Commercial	225	70
	Myers Bros.....	Printing 100 programmes....	226	15 00
	Ohio State Journal.....	Printing and stationery.....	227	22 75
	W. H. Scott.....	Expenses att'g farmers' inst..	228	10 66
	A. H. Tuttle	" " " ..	229	10 17
	H. A. Weber	" " " ..	230	31 90
	H. J. Detmers	" " " ..	231	22 70
	Aston & Huff.....	Supplies—chemical dep't....	232	6 50
	Mark Francis.....	Salary Jan'y and Feb'y, 1887	233	40 00
	Earl L. Clark	125 hrs. work, @ 14 c. pr. hr.	234	17 50
	Thos. Garrett	4½ days' w'k, @ \$1.25 pr. day	235	5 62
	T. V. Hipp	109 m. lime, @ 8 cents.....	236	8 72
	C. R. Rhoads	75 hrs. work, @ 14 c. pr. hr..	237	10 50
	T. J. Scanlan.....	207½ " 14 " ..	238	29 05
	P. F. Clarke	10½ days' work, @ \$1.25 p. day	239	31 05
	Wm. H. Holmes.....	218½ hrs. " @ 14 c. p. hr..	240	29 29
	W. S. Devol, Farm Mgr ...	39 hrs. farm team in clearing	241	5 85
	J. T. Clark	282½ hrs. work, @ 14 c. p. hr.	242	39 55
	Wm. Taylor	1 gross matches	243	5 50
	Siebert & Lilley.....	2 warrant books.....	244	11 00
	Cent'l Union Telephone Co	Rent time sig'l line to Feb., '88	245	25 00
	D. W. Groff	Freight and drayage	246	19 72
	F. E. Mills..	2 door mats.....	247	8 00
	Braun & Bruck	25 lbs. borax, \$2.50; 5 lbs. sulphur, 25 cts..	248	2 75
	W. U. Telegraph Co.....	Telegrams.....	249	1 08
	V. J. Emery	8 yards ribbon, @ 10 cts.....	250	80
	J. M. & W. Westwater	4 lamps and chimneys	251	2 40
	Webb & Jones.....	Carriages for trustees	252	11 00
	C. S. Fay	2 acknowledgment deeds....	253	80
	Washington Townsend ...	24 days janitor, Feb'y, 1887..	254	36 00
	Col. Water Works	Rep'g meter, hort. build'g ...	255	2 25

STATEMENT V—Continued.

Date.	To whom paid.	For what purpose.	No.	Amount.
1887.				
March 4	R. O. Smith & Co	Repairs, lumber for same.....	256	\$16 08
	Buffalo Forge Co	Supplies, mech'l departm't ..	257	7 00
	H. P. Minot	" " ..	258	2 73
	Frank Prine.....	Work on cases, chem'l dept.	259	18 00
	Braun & Bruck	Supplies, physical departm't	260	2 78
	Jas. W. Queen & Co.....	1 Kew magnetometer	261	343 85
	Adam Schneider.....	Repairs, Dr. Knight's res.....	262	8 25
	Kelley & Co.....	" plumbing.. ..	263	35 65
	Thos. J. Driskell & Co... ..	" boilers.....	264	60 00
	Geo. M. Maris & Co	" glass and hardware	265	6 30
	Col. Brass & Steam Pipe W's	1 Gordon Maxwell pump.....	266	186 52
	" "	Supplies, etc., steam heating	267	26 24
	David O'Brine	Salary Feb., '87, installment	268	100 00
	Columbus Post Office	Stamps & stamped envelopes	269	44 50
	Geo. B. Kauffman	Salary Feb., '87, installment	270	80 00
	W. R. Kinnear.....	Repairs on tower	271	357 10
	A. H. Tuttle	Salary March, '87, installm't	272	225 00
26	N. W. Lord	" " "	273	100 00
	W. H. Scott.....	" " "	274	300 00
	Edward Orton	" " "	275	225 00
	S. A. Norton	" " "	276	225 00
	N. S. Townhsend.....	" " "	277	225 00
	S. W. Robinson	" " "	278	225 00
	S. C. Derby	" " "	279	225 00
	H. A. Weber	" " "	280	225 00
	J. N. Bradford	" " "	281	100 00
	W. R. Lazenby	" " "	282	225 00
	J. R. Smith	" " "	283	225 00
	H. J. Detmers.....	" " "	284	120 00
	Geo. W. Knight... ..	" " "	285	225 00
	Geo. W. McCoard	" " "	286	120 00
	Benj. F. Thomas.....	" " "	287	225 00
	Geo. C. Comstock	" " "	288	225 00
	A. P. Blocksom	" " "	289	50 00
	David O'Brine	" " "	290	100 00
	A. H. Welsh.....	" " "	291	120 00
	C. N. Brown.....	" " "	292	140 00
	Alice K. Williams.....	" " "	293	100 00
	E. A. Eggers.....	" " "	294	120 00
	Geo. B. Kauffman	" " "	295	80 00
	Benj. W. Snow.....	" " "	296	80 00
31	W. C. McCracken	" to April 1, '87.....	297	66 67
	E. C. Grove.....	" "	298	33 33
April 1	W. S. Devol.....	" March, '87, installm't	299	50 00
	F. W. Prentiss.....	" to April 1, '87.....	300	25 00
	Alexis Cope.....	" "	301	108 33
2	Anna Neill Scott.....	" March, '87, installm't	302	15 00
9	W. J. Green.....	" to April, '87.....	303	25 00
	A. H. Tuttle.. ..	Expenses to Cincinnati.....	304	6 75
11	Anna Neill Scott.....	W'k catalogue, geol. museum	305	20 25
	J. M. Stutz.....	Rep. cistern, Dr. Knight's res	306	9 75
	V. J. Emory.....	Salary March, '87, installm't	307	12 50
	P. Smith & Co.....	Photographic supplies.....	308	8 65
	Aston & Huff.....	Supplies, physical dep't.....	309	7 90
	H. D. Bishop	19 $\frac{3}{4}$ hrs. work " ..	310	3 95
	Bausch & Lomb Optical Co.	Supplies, "	311	9 00
	Col. Hock'g Coal & Iron Co.	On account of coal delivered	312	451 82
	E. H. Kellogg.....	27 gallons machine oil.....	313	27 50
	Adams Express Co.....	Freight on packages.....	314	3 05

STATEMENT V—Continued.

Date.	To whom paid.	For what purpose.	No.	Amount.
1887.				
April 11	R. O. Smith & Co.....	Lumber for workshops.....	315	\$9 81
	W. C. McCracken	Freight on packages.....	316	63
	J. C. Tyler.....	Repairs, etc.....	317	2 45
	Geo. M. Maris & Co.....	Nails for workshop.....	318	1 05
	Lantern Publishing Co....	Advertising University.....	319	27 00
	F. W. Christian	Supplies historical dep't....	320	6 25
	W. U. Telegraph Co.....	Telegrams.....	321	51
	Cherrington & Robinson..	Rubber stamp for treasurer..	322	1 75
	Green, Joyce & Co.....	144 school crayons.....	323	11 52
	Ohio Furniture Co.....	2 dozen chairs.....	324	27 00
12	Col. Brass & St. Pipe W'ks	Pipes and fittings.....	325	11 55
	Col. Gas Light & Coke Co.	201 bushels coke.....	326	19 57
	J. H. Stettner.....	Repairing piano.....	327	6 50
	Central Ohio Paper Co....	100 M sheets book paper....	328	35 00
	Kilbourne, Jones & Co....	Supplies, mechanical dep't..	329	10 83
	Columbus Iron Works....	" " " "	330	7 06
	Union Manufacturing Co..	1 6-in. chuck shell.....	331	7 00
	Columbus Rubber Co.....	Supplies, tubing.....	332	4 80
	A. H. Smythe.....	" stationery ..	333	3 05
	Wash. Townsend.....	27 days janitor, March, '87..	334	40 50
	Central Union Tel. Co	Rent two instruments, etc...	335	26 00
	American Express Co.....	Freight on package.....	336	10 95
	Columbus Water Works...	Advance deposit.....	337	110 00
May 5	F. W. Prentiss.....	Salary to May 1, 1887.....	338	25 00
	Anna Neill Scott.....	" April, '87, installm't..	339	15 00
	V. J. Emery.....	" " " "	340	12 50
6	W. J. Green.....	" to May 1, 1887.....	341	25 00
7	Columbus post-office.....	300 1c postage stamps.....	342	3 00
11	Mark Francis.....	Services veterinary museum	343	40 00
	Amos Markey.....	Cleaning machinery.....	344	6 00
12	E. L. Clarke..	210 hrs. work in clearing....	345	29 40
	C. R. Rhoades.....	264 " "	346	36 96
	Wm. H. Holmes.....	214½ " "	347	30 03
	J. L. Clark..	259½ " "	348	36 33
	G. C. Davis.....	78 " "	349	10 92
	W. R. Kinnear & Co.....	Supplies, chemical dep't....	350	16 20
	Geo. C. Comstock.....	Lock	351	2 00
	W. R. Lazenby	Care of class-room.....	352	9 90
	J. Wiggins & Co..	Plot of grounds and plate....	353	15 00
	T. V. Iliff.....	200 M lime.....	354	1 80
	J. M. Stutz.....	Repairs, Prof Tuttle's res...	355	19 37
	Andrew Schwarz Co	Repairs	356	50
	Col. & H. C. & I. Co.....	On account coal delivered...	357	139 21
	Forest City Pk'g Co.....	Supplies..	358	64
	N. W. Jackson & Son.....	Rebinding and indexing.....	359	3 00
	S. R. Watt.....	Rep's Prof. Townshend's res	360	2 00
	Col. Brass & St. Pipe W'ks	Steam fittings.....	361	5 65
	N. Blake.....	Repairs dormitory.....	362	2 25
	Wells & Tracy.....	2 dozen brooms.....	363	4 80
	R. O. Smith & Co	Supplies, zoological dep't....	364	3 75
	A. C. Berlin & Co.....	1 M class cards.....	365	3 00
	Geo. F. Wheeler..	22 gallons oil.....	366	4 00
	N. S. Townshend..	Expenses to Washington....	367	41 00
	"	Expenses att'g farmers' inst	368	40 25
	Ohio State Journal Co.....	Printing circulars.....	369	5 00
	N. S. Townshend.....	" slips, etc.....	370	4 00
13	"	Frame for picture.....	371	5 00
	Gazette Printing Co.....	Printing.....	372	30 25
	Michigan Lubricatng Co...	1 portable lubricator.....	373	16 00

STATEMENT V—Continued.

Date.	To whom paid.	For what purpose.	No.	Amount.
1887.				
May 13	Jas. Gardner, jr.....	2 clay retorts, etc.....	374	\$52 50
	C. E. Skinner.....	18 hrs. work in mech. dep't..	375	3 60
	R. B. Smith.....	Putting up machinery.....	376	3 00
	Hershiser & Snyder.....	Supplies, mechanical dep't..	377	2 80
	Columbus Water Works..	Water rent, 6 mos. to May, '88	378	149 59
	M. F. Capron.....	Repairs ..	379	11 05
	A. H. Tuttle.....	Supplies, zoological dep't....	380	8 75
	Kauffman, Lattimer & Co.	Express charges on glassware	381	1 00
	A. H. Smythe.....	1 historical atlas.....	382	2 00
	Robert Clarke & Co.....	1 Lee Micromoters Vade Me- cum.....	383	
16	Kauffman, Lattimer & Co..	Supplies, pharmacy dep't....	384	187 39
17	Alexis Cope.....	Services as bursar.....	385	200 00
31	"	Salary to June 1, 1887.....	386	108 33
June 2	V. J. Emery.....	" May, '87, installment..	387	12 50
	F. W. Prentiss.....	" to June 1, 1887.....	388	25 00
	W. S. Devol.....	" May, '87, installment..	389	50 00
	W. J. Green	" to June 1, 1887.....	390	25 00
4	Anna Neill Scott..	" May, '87, installment..	391	15 00
11	Columbus post-office..	400 1c stamps.....	392	4 00
12	"	Stamps for catalogues.....	393	35 00
22	The Makio.....	Advertising University.....	394	15 00
23	Mark Francis.....	Services veterinary museum	395	20 00
	Geo. C. Comstock	Salary June, '87, installment	396	225 00
	Geo. W. Knight.....	" " "	397	225 00
	W. A. Daugherty.....	Music for band	398	8 00
	A. H. Tuttle.....	Salary June, '87, installment	399	225 00
	H. A. Weber	" " "	400	225 00
	J. R. Smith.....	" " "	401	225 00
	E. A. Eggers.....	" " "	402	120 00
	Benj. F. Thomas..	" " "	403	225 00
	C. N. Brown.....	" " "	404	140 00
	V. J. Emery..	" " "	405	12 50
	Alice K. Williams.....	" " "	406	100 00
	Lantern Publishing Co....	Advertising University.....	407	13 50
	S. C. Derby	Salary June, '87, installment	408	225 00
24	W. H. Hannum	Copying class records	409	9 20
	Columbus Post-office.....	200 2-ct. and 200 1-ct. stamps	410	60 00
	Alexis Cope	Salary to July 1, 1887	411	108 33
	The Critic.....	Advertising University.....	412	20 50
	G. H. Twiss.....	Supplies..	413	60 20
27	Thos. B. Hunt	Repairs, Dr. Knight's res....	414	7 50
	David O'Brine	Salary June, '87, installment	415	100 00
	S. W. Robinson ..	" " "	416	225 00
	Geo. W. McCoard	" " "	417	120 00
	S. A. Norton.....	" " "	418	225 00
	Jos. N. Bradford	" " "	419	100 00
	W. R. Lazenby	" " "	420	225 00
	N. W. Lord	" " "	421	100 00
	H. J. Detmers	" " "	422	120 00
	"	1 mule for dissection	423	2 00
	Thos. Mathew	Letter'g tablets, chem'l dept	424	4 80
	C. G. Newton	Making shelving.....	425	3 25
	A. P. Blocksom	Salary June, '87, installment	426	50 00
	A. H. Welsh.....	" " "	427	120 00
	N. S. Townshend	" " "	428	225 00
	"	Rep's, Prof. Townshend's res	429	10 19
	Columbus Record.....	Advertising veterinary clinic	430	4 40
	Hann & Adair.....	150 examination questions...	431	1 40

STATEMENT V—Continued.

Date.	To whom paid.	For what purpose.	No.	Amount.
1887.				
June 27	Strobridge Lithog. Co	Supplies, stat'y & diplomas ..	432	\$65 00
	Columbus post-office	100 1-cent stamps	433	10 00
	A. H. Smythe	Supplies, stationery	434	2 40
	Geo. M. Maris & Co	" hardware	435	20 60
	Slade & Kelton	" lumber	436	62 29
	Siebert & Lilley	" stationery	437	16 75
	Hasbrook, Orr & Byers	" pitcher, etc., pres't ..	438	1 75
	Geo. M. Maris & Co	" hardware	439	9 15
	R. O. Smith & Co	" lumber	440	5 85
	J. & H. Berge	" mining departm't ..	441	4 00
	Col. Brass & St'm Pipe W's ..	" 12½ lbs. ingots copp ..	442	1 88
	Eimer & Amend	" chemical departm't ..	443	27 64
	Kauffman, Lattimer & Co.	" "	444	29 61
	J. F. Mellott	" battalion	445	1 96
	J. N. Iliff	20 m. lime	446	1 80
	Kelley & Co	Repairs, Dr. Knight's resid.		
		Virginia military lands ...	447	5 00
	Webb & Jones	Carriage for president	448	3 00
	B. & O. Telegraph Co	Telegram	449	27
	Columbus Transfer Co	Freight and drayage	450	13 78
29	Columbus post-office	500 1-cent stamps, catalogues	451	5 00
	Anna Neill Scott	Salary June, '87, installment	452	15 00
	Benj. W. Snow	" " "	453	80 00
30	F. W. Prentiss	" to July 1, 1887	454	25 00
July 1	C. P. Sigerfoos	27 hrs. work, phys. dep't	455	6 75
2	Nitschke Bros	500 exam'n pap's, chem. dep ..	456	4 00
	"	Catalogues and slips	457	487 50
5	W. H. Scott	Salary June, '87, installment	458	300 00
7	W. S. Devol	" " "	459	50 00
	W. J. Greene	" to July 1, 1887	460	25 00
9	R. O. Smith & Co	Supplies, lumber	461	6 57
	Halm & Bellows Furn. Co.	50 doz. chairs, commencem't ..	462	37 50
	Miles, Bancroft & Sheldon ..	Ribbons for diplomas	463	3 08
	David Jones	Supplies, zool. dep't	464	62 90
	M. F. Capron	20½ hrs. work, stage build'g..	465	4 50
	Kauffman, Lattimer & Co.	1 lb. cor. sublimate	466	80
	J. P. Taylor	Supplies, pharm. departm't..	467	3 00
	Braun & Bruck	" phys'l departm't..	468	4 07
	Bausch & Lomb Optical Co ..	" "	469	25 88
22	Jas. Washington	Repairs, 2½ days labor	470	3 75
	Wash. Townsend	" 11½ days helper	471	23 25
Aug. 2	F. W. Prentiss	Salary to August, 1887	472	25 00
	H. S. Fairbanks	Exc'ss fees p'd, winter t. '86-7	473	5 00
3	J. W. Atcherson	Carriages for trustees	474	12 00
	Alexis Cope	Salary to August 1, 1887	475	108 33
	Columbus post-office	Postage stamps	476	42 00
	U. S. Express Co	Freight on package	477	25
	R. Smith & Co	Supplies, phys'l dep't	478	9 45
	Cent'l U. Telephone Co ...	Rent time signal line to Sept.		
		30, 1887	479	25 25
	Nitschke Bros	Printing exam't'n quest's, etc	480	9 75
	J. A. McAuley	Supplies, phys'l dep't	481	5 00
	Geo. M. Maris & Co	" carpenter shop	482	15 70
	L. C. Walker	34 hrs., address'g catalogues	483	5 10
	Strobridge Litho. Co	5 parchment diplomas	484	5 00
	Halm & Bellows Furn. Co.	6 chairs	485	6 00
	Hann & Adair	Printing circulars, etc	486	13 85
	W. U. Telegraph Co	Telegram	487	25
	D. W. Groff	Freight and drayage	488	10 23

STATEMENT V—Continued.

Date.	To whom paid.	For what purpose.	No.	Amount.
1887.				
Aug. 3	Edward Orton	Supplies, geological dep't....	489	\$17 91
	W. H. Hannum	Services rendered.....	490	9 40
	W. A. Daugherty	2 musicians, commencement	491	6 00
	W. H. Scott.....	Supplies, stationery	492	13 93
	Door, Sash & Lumber Co..	Repairs, Prof. Thomas' res., Virginia military lands....	493	4 74
	M. F. Capron	Repairs, Prof. Thomas' res., Virginia military lands....	494	2 25
	J. W. Stutz	Repairs, Prof. Thomas' res., Virginia military lands.. ..	495	47 75
18	Dennis Ryan	Drayage.. ..	496	1 25
23	Geo. B. Kauffman.....	Salary June, '87, installment	497	80 00
29	W. J. Greene	" to September 1, 1887..	498	50 00
31	Alexis Cope	" " " ..	499	108 33
Sept. 1	F. W. Prentiss.. ..	" " " ..	500	25 00
	Margaret Parry	Cleaning buildings.....	501	35 00
3	C. G. Newton	Repairs, Prof. Thomas' res..	502	1 75
	Wash. Townsend	15 days, cleaning buildings..	503	22 50
	W. S. Devol	Hauling for University	504	38 69
	W. C. McCracken	Cleaning buildings.. ..	505	36 28
7	S. N. Webb.....	Repairs, carpentering, etc ...	506	4 14
	W. R. Kinnear & Co	" Prof. Tuttle's res ...	507	2 00
	M. F. Capron	" Prof. Thomas' res., Virginia military lands....	508	6 58
	Wells & Tracy	Supplies, pails	509	1 47
	Geo. F. Wheeler	" soap, etc	510	10 73
	W. G. Dunn & Co.....	" 25 yards crash....	511	1 19
	J. Dent.....	Repairs, cleaning vaults	512	50 00
	Slade & Kelton	Supplies, lumber.....	513	68 25
	Door, Sash & Lumber Co..	" drafting board, etc.	514	75
	Columbus Transfer Co	Freight and drayage	515	35
	Columbus Dispatch	Advertising for proposals....	516	11 25
	Webb & Jones.....	Carriages for trustees	517	6 00
	Myers Bros	Supplies, stationery	518	3 25
	Siebert & Lilley	" " ..	519	1 50
	Hann & Adair	" " ..	520	12 45
	J. Wiggins & Co	2 copies Columbus Directory	521	
	American Express Co. ...	Freight on package	522	00
	W. H. Scott	Postage, express charges, etc.	523	25
	"	Traveling expenses	524	49 80
	Gazette Printing Co.....	Printing cards	525	1 50
	Geo. H. Twiss	Supplies, engineer'g dep't ...	526	76 05
	Col. Electric Supply Co ...	" physical " ..	527	1 25
	Eimer & Amend	" " " ..	528	35 27
	S. Hawkrige	" " " ..	529	48 49
	Jas. W. Queen & Co	"	530	00
	B. F. Thomas	" physical dep't	531	21 95
	Henry J. Green.....	" " " ..	532	24 25
	J. H. Berge.....	" agricult'l " ..	533	160 74
17	Columbus post-office	500 2-cent, 300 1-cent stamps	534	13 00
24	W. H. Scott.....	Salary Sept., '87, installment	535	300 00
	Edward Orton	" " " ..	536	225 00
	S. A. Norton	" " " ..	537	225 00
	N. S. Townshend.....	" " " ..	538	225 00
	A. H. Tuttle	" " " ..	539	225 00
	S. W. Robinson	" " " ..	540	225 00
	N. W. Lord	" " " ..	541	100 00
	S. C. Derby	" " " ..	542	225 00
	W. R. Lazenby	" " " ..	543	225 00

STATEMENT V—Continued.

Date.	To whom paid.	For what purpose.	No.	Amount.
1887. Sept. 24	J. R. Smith	Salary Sept., '87, installment	544	\$225 00
	H. A. Weber	" " "	545	225 00
	B. F. Thomas	" " "	546	225 00
	R. D. Bohannon	" " "	547	225 00
	Geo. W. Knight	" " "	548	225 00
	H. J. Detmers	" " "	549	120 00
	Chas. E. Kilbourne	" " "	550	50 00
	C. N. Brown	" " "	551	140 00
	Alice K. Williams	" " "	552	100 00
	E. A. Eggers	" " "	553	120 00
	Geo. W. McCoard	" " "	554	120 00
	J. N. Bradford	" " "	555	100 00
	A. H. Welsh	" " "	556	120 00
	Alexis Cope	" to October 1, 1887	557	108 33
Oct. 1	F. W. Prentiss	" " "	558	25 00
	W. S. Devol	" Sept. '87, installment	559	50 00
	W. C. McCracken	Amt. paid cleaning build'gs.	560	74 88
	Jos. F. Whitney	On account salary as assist't physical department.....	561	80 00
	Wash. Townsend	13 days' cleaning buildings..	562	20 50
3	C. P. Sigerfoos	2½ days' visitors' attendant..	563	4 50
	G. P. Grimsley	59 hrs. "	564	8 85
	C. E. Skinner	Repairs	565	5 55
	R. K. Beach	6 hrs. visitors' attendant	566	90
	Hershiser & Snyder	Supplies, mech'l dep't.....	567	13 50
	Richmond, Backus & Co..	24 class registers	568	8 64
	Murphy & Hinman	1 window platform.....	569	8 00
	Capital City Mach. W'ks..	Supplies, general	570	9 50
4	Geo. M. Maris & Co	" hardware	571	5 85
	"	" "	572	9 10
	W. U. Telegraph Co	Telegrams	573	5 68
	Hann & Adair	Supplies, stationery	574	21 70
	Volksfreund Publish'g Co.	Advertising University	575	4 00
	Remington Bros	" "	576	141 55
	Ohio Farmer	" "	577	23 94
	Ohio State Journal Co.....	" for bids for coal	578	12 00
	Ohio Sonntagsgast	Advert'g veter'y clinic, 9 mos	579	12 00
	Columbus Dispatch	" " "	580	17 00
	Am. Grange Bulletin.. ..	Advertising agricu'l courses	581	57 00
	Kauffman, Lattimer & Co..	Supplies.....	582	1 26
	J. M. & W. Westwater....	" gas fittings.....	583	34 05
	David Westwater	Repairs, Dr. Knight's res....	584	1 80
	Thos. G. Neski	" plumbing	585	9 95
	J. M. Stutz	" Prof. Tuttle's resi- dence, Virginia mil. lands..	586	81 50
	H. H. Blunt	Repairs, Prof. Tuttle's resi- dence, Virginia mil. lands..	587	7 46
	M. F. Capron	Repairs, Prof. Tuttle's resi- dence, Virginia mil. lands..	588	22 07
	Col. Brass & St. Pipe W'ks	Supplies, pnmp, etc.....	589	20 00
5	W. J. Green	Salary to October, '87.....	590	25 00
10	Ralph W. Tyler	" night watchman.....	591	30 00
11	Columbus post-office.....	500 2c postage stamps.....	592	10 00
15	Chas. P. Sigerfoos	Salary Sept., '87, installment	593	15 00
	C. C. Oviatt	" " "	594	12 50
29	W. R. Lazenby	" Oct., '87, " "	595	225 00
	J. R. Smith	" " "	596	225 00
	H. A. Weber	" " "	597	225 00
	Benj. F. Thomas	" " "	598	225 00

STATEMENT V—Continued.

Date.	To whom paid.	For what purpose.	No.	Amount.
1887.				
Oct. 29	R. D. Bohannon.....	Salary Oct., '87, installment	599	\$225 00
	Geo. W. Knight.....	" " "	600	225 00
	H. J. Detmers.....	" " "	601	120 00
	Chas. E. Kilbourne.....	" " "	602	50 00
	C. N. Brown.....	" " "	603	140 00
	Alice K. Williams.....	" " "	604	100 00
	E. A. Eggers.....	" " "	605	120 00
	Geo. B. Kauffman.....	" Sept., '87, "	606	200 00
	Geo. W. McCoard.....	" Oct., '87, "	607	120 00
	Jos. N. Bradford.....	" " "	608	100 00
	A. H. Welsh.....	" " "	609	120 00
	C. C. Oviatt	" " "	610	12 50
	C. P. Sigerfoos.....	" " "	611	15 00
	W. S. Devol.....	" " "	612	50 00
	W. J. Green.....	" to Nov. 1, '87.....	613	25 00
	Fred. Keffer.....	" Sept. & Oct. '87, intall'ts	614	160 00
	Alexis Cope.....	" to Nov. 1, 1887.....	615	108 33
	F. W. Prentiss.....	" "	616	25 00
Nov. 1	Olive B. Jones.....	" Sept. & Oct. '87, install't	617	30 00
	Ralph W. Tyler.....	" to Nov. '87, nightwatch	618	30 00
7	A. H. Tuttle.....	Supplies, physiological dep't	619	4 70
	Hasbrook, Orr & Byers.....	" " "	620	20 00
	Jos. Zentmayer.....	" " "	621	31 50
	The Cornell & Pheneger Chemical Co.....	" " "	622	8 72
	Eimer & Amend	" " "	623	32 42
	Glock & Tallmadge.....	" " "	624	8 35
	Jas. W. Queen & Co.....	" " "	625	7 77
	Anna Neill Scott.....	Transcrib'g for geol. museum	626	14 00
	Harrison Cole.....	Supplies, civil engin'r'g dep't	627	65 00
	Geo. H. Twiss.....	" " "	628	32 50
	Kauffman, Lattimer & Co..	" phys'l dep't.....	629	54 11
	Eimer & Amend.....	" agri'l chem. dep't..	630	12 50
	Kauffman, Lattimer & Co..	" " ..	631	75 65
	W. A. Daugherty.....	" for band.. ..	632	18 25
	W. G. Dunn & Co.....	" military dep't.....	633	1 00
	H. Braun & Sons.....	" "	634	11 72
	W. S. Devol, farm sup't....	Repairs, fences, etc.....	635	5 00
	Slade & Kelton	Supplies, lumber.....	636	43 00
	Mast, Crowell & Kirkpatrick	Advertising University.....	637	39 20
	Nat. Stockman & Farmer..	" "	638	21 84
	C. I. Felhousen & Co.....	" "	639	50 00
	A. N. Kellogg New'per Co.	" "	640	66 00
	Druggist's Circular.....	" "	641	10 00
	E. O. Randall & Co.....	Repairs, Dr. Knight's, Va. M. L	642	14 50
	H. Braun & Sons.....	" " "	643	11 75
	John Benbow	" " "	644	26 25
	H. L. Newton	" " "	645	2 62
	Cen. Union Telephone Co	Rent, 2 instruments and toll to January 1, 1888.....	646	25 50
	W. U. Telegraph Co... ..	Telegrams	647	3 87
	Columbus Water Works...	Water rent to Nov. 1, 1887...	648	169 40
	U. S. Express Co..	Freight and drayage.....	649	2 95
	Geo. M. Maris & Co.....	Supplies, hardware.....	650	4 26
	Chas. Wheeler.....	Repairs	651	24 00

STATEMENT V—Concluded.

Date.	To whom paid.	For what purpose.	No.	Amount.
1887. Nov. 7	A. H. Smythe	Stationery	652	\$1 10
	The Halm-Bellows Fur. Co.	Repairs	653	1 50
	Siebert & Lilley.....	Supplies, stationery.....	654	13 15
	Gazette Printing Co.....	Printing examination papers	655	5 00
	W. S. Devol, farm sup't....	Hauling for University.....	656	44 82
	Total disbursement...			\$47,197 19
	By balance, cash in	treasurer's hands..		7,439 62
				\$54,636 81

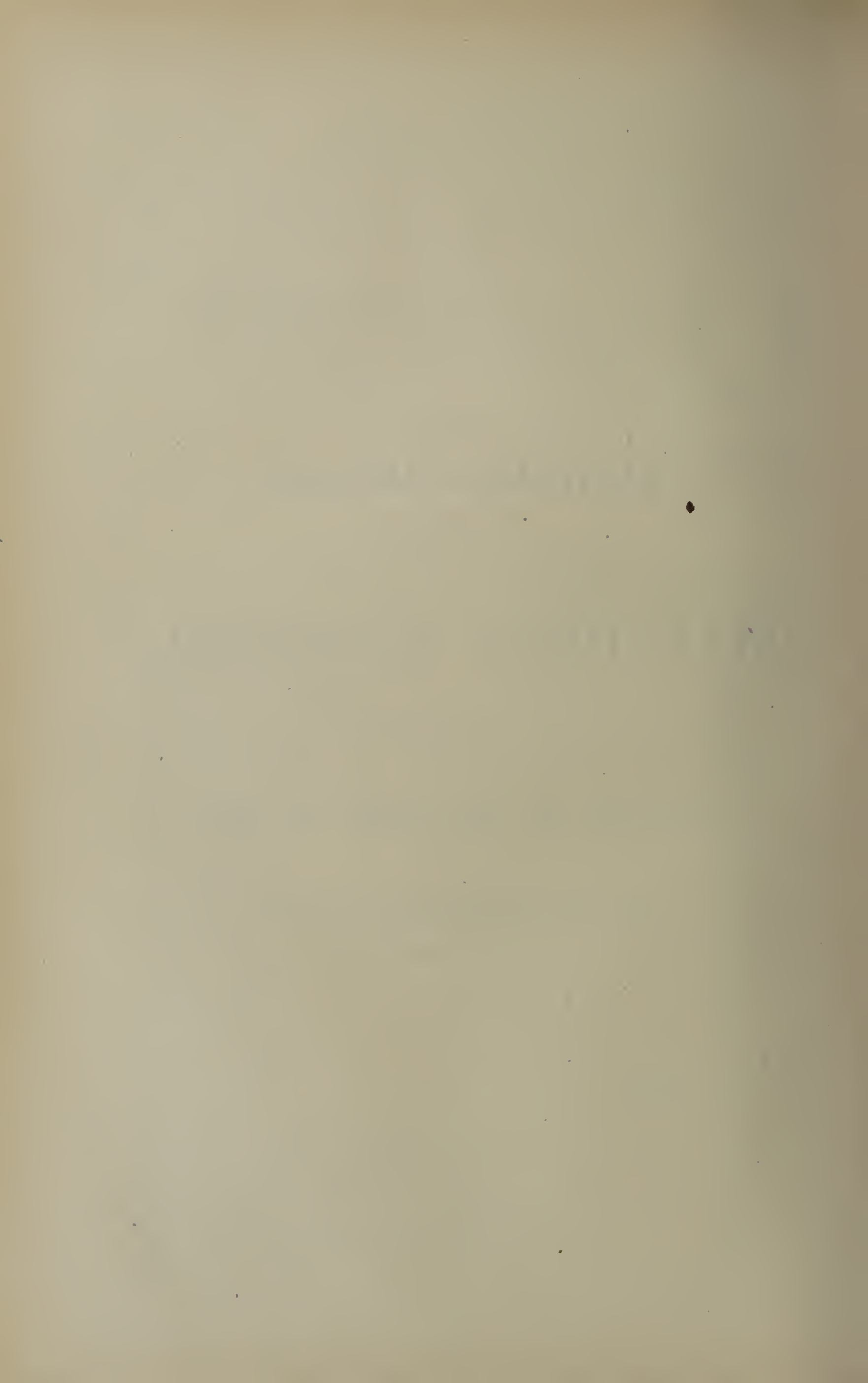
STATEMENT VI.

LIST OF EMPLOYES AND COMPENSATION.

In compliance with section 7 of the organic act, passed by the Legislature of Ohio, May 1, 1878, which requires a list of "the number of professors, officers, teachers and other employes, and the position and compensation of each, to be reported annually, " I submit the following :

William H. Scott, President.....	\$3,000 00
Edward Orton, Professor.....	2,250 00
Sidney A. Norton, Professor.....	2,250 00
Norton S. Townshend, Professor.....	2,250 00
Albert H. Tuttle, "	2,250 00
Stillman W. Robinson, "	2,250 00
Nathaniel W. Lord, "	1,000 00
Samuel C. Derby "	2,250 00
William R. Lazenby, "	2,250 00
Josiah R. Smith, "	2,250 00
Henry A. Weber, "	2,250 00
Benjamin F. Thomas, "	2,250 00
R. D. Bohannan, "	2,250 00
George W. Knight, "	2,250 00
Charles E. Kilbourne, "	500 00
H. J. Detmers, "	1,200 00
C. Newton Brown, Assistant Professor..	\$1,400 00
Allice K. Williams " "	1,000 00
Ernest A. Eggers, " "	1,200 00
George B. Kauffman, " "	1,000 00
Frederick Keffer, " "	800 00
George W. McCoard, " "	1,200 00
Joseph F. Whitney, " "	800 00
Joseph N. Bradford, " "	1,000 00
Albert H. Welsh, " "	1,200 00
C. P. Sigerfoos, " "	150 00
Alexis Cope, Secretary.....	1,300 00
Frederick W. Prentiss, Treasurer.....	300 00
Olive B. Jones, Assistant Librarian	150 00
C. C. Oviatt, Clerk to President.....	125 00
William McCracken, Engineer.....	800 00
Edda C. Grove, Fireman.....	400 00
William S. Devol, Superintendent of Farm.....	500 00
W. J. Green, Superintendent Gardens.....	300 00
Chas. A. Roth, Florist.....	600 00
Total	\$46,925 00

BIENNIAL REPORT
OF THE
ATTORNEY GENERAL,
TO THE
GOVERNOR OF THE STATE OF OHIO,
FOR THE YEARS 1886 AND 1887.



BIENNIAL REPORT.

ATTORNEY-GENERAL'S OFFICE,
COLUMBUS, OHIO, *December 31, 1887.*

Hon. J. B. FORAKER, Governor of the State of Ohio:

SIR: I have the honor to submit herewith a report of the official business transacted by the Attorney-General during the past two years.

The following sums of money have been collected and certified into the State Treasury, through this office:

Date.	From whom or what source received.	Amounts.	
1886.			
Jan. 12	Cash from Patton Manufacturing Co.....	\$1,673 44	
12	Paid into State Treasury.....		\$1,673 44
21	Cash from Columbus Bolt Works	1,634 23	
21	Paid into State Treasury		1,634 23
Feb. 19	Cash from Columbus Bolt Works	1,895 13	
19	Paid into State Treasury		1,895 13
April 8	Cash from Columbus Bolt Works.....	1,850 65	
8	Paid into State Treasury		1,850 65
19	Cash from F. D. Klotts.....	722 40	
19	Paid into the State Treasury		722 40
May 13	Cash from Columbus Bolt Works	1,731 89	
13	Paid into State Treasury.....		1,731 89
June 16	Cash from Columbus Bolt Works.....	4,536 76	
16	Paid into the State Treasury.....		4,536 76
July 14	Cash from Ohio Tool Co.....	2,212 19	
14	Paid into State Treasury		2,212 19
22	Cash from Columbus Bolt Works..	2,205 13	
22	Paid into State Treasury		2,205 13
Aug. 3	Cash from F. D. Klotts.....	825 76	
3	Paid into State Treasury.....		825 76
18	Cash from Geo. W. Gill	1,183 05	
18	Paid into State Treasury		1,183 05
24	Cash from F. D. Klotts	1,041 31	
24	Paid into State Treasury		1,041 31
24	Cash from Columbus Bolt Works.....	4,623 32	
24	Paid into State Treasury....		4,623 32
Sept. 1	Cash from Ohio Tool Co	1,066 28	
1	Paid into State Treasury.....		1,066 28
Oct. 6	Cash from Columbus Bolt Works.....	2,000 89	
6	Paid into State Treasury		2,000 89
8	Cash from F. D. Klotts.....	1,110 10	
8	Paid into State Treasury		1,100 10

AMOUNTS COLLECTED, ETC.—Continued.

Date.	From whom or what source received.	Amounts.	
1886.			
Oct. 30	Cash from Ohio Tool Co.....	\$950 12	
30	Paid into State Treasury		\$950 12
Nov. 15	Cash from F. D. Klotts.....	1,100 69	
15	Paid into State Treasury		1,100 69
17	Cash from Ohio Tool Co.....	905 46	
17	Paid into State Treasury		905 46
17	Cash from Columbus Chair Co.....	348 03	
17	Paid into State Treasury		348 03
17	Cash from Brown, Hinman, Huntington Co	1,461 50	
17	Paid into State Treasury.....		1,461 50
Dec. 4	Cash from Columbus Bolt Works	1,802 61	
4	Paid into State Treasury		1,802 61
24	Cash from Columbus Chair Co.....	648 55	
24	Paid into State Treasury		648 55
Total for year 1886.....		<u>\$37,530 49</u>	<u>\$37,530 49</u>
1887.			
Jan. 17	Cash from F. D. Klotts.....	\$1,045 45	
17	Paid into State Treasury		\$1,045 45
18	Cash from Columbus Bolt Works.....	1,765 05	
18	Paid into State Treasury		1,765 05
18	Cash from Ohio Tool Co.....	856 29	
18	Paid into State Treasury		856 29
Feb. 3	Cash from Columbus Bolt Works.....	1,965 31	
3	Paid into State Treasury		1,965 31
16	Cash from F. D. Klotts.....	753 51	
16	Paid into State Treasury.....		753 51
18	Cash from Ohio Tool Co.....	877 58	
18	Paid into State Treasury.....		877 58
March 11	Cash from Columbus Chair Co	800 80	
11	Paid into State Treasury		800 80
21	Cash from F. D. Klotts.....	669 47	
21	Paid into State Treasury		669 47
April 16	Cash from Columbus Chair Co.....	1,383 84	
16	Paid into State Treasury.....		1,383 84
May 2	Cash from F. D. Klotts.....	645 38	
2	Paid into State Treasury.....		645 38
10	Cash from Columbus Chair Co	1,085 86	
10	Paid into State Treasury		1,085 86
June 11	Cash from Columbus Chair Co.....	1,305 28	
11	Paid into State Treasury.....		1,305 28
July 12	Cash from Columbus Chair Co	1,293 86	
12	Paid into State Treasury.....		1,293 86
15	Cash from F. D. Klotts	747 70	
15	Paid into State Treasury		747 70
Aug. 3	Cash from F. D. Klotts.....	300 00	
3	Paid into State Treasury		300 00
10	Cash from Columbus Chair Co	1,241 81	
10	Paid into State Treasury.....		1,241 81
26	Cash from F. D. Klotts... ..	379 76	
26	Paid into State Treasury		379 76
31	Cash from Newsom & Monypeny	1,742 13	
31	Paid into State Treasury		1,742 13
Sept. 6	Cash from F. D. Klotts	621 25	
6	Paid into State Treasury		621 25
13	Cash from Columbus Chair Co	1,294 20	
13	Paid into State Treasury.....		1,294 20
22	Cash from Climax Table Slide Co.....	169 45	

AMOUNTS COLLECTED, ETC.—Concluded.

Date.	From whom or what source received.	Amounts.
1887.		
Sept. 22	Paid into State Treasury	\$169 45
Oct. 15	Cash from Columbus Chair Co.....	1,220 13
15	Paid into State Treasury	1,220 13
22	Cash from F. D. Klotts.....	606 18
22	Paid into State Treasury.....	606 18
Nov. 11	Cash from F. D. Klotts.....	639 80
11	Paid into State Treasury	639 80
14	Cash from Newsom & Monypeny	897 38
14	Paid into State Treasury	897 38
14	Cash from Columbus Chair Co	1,329 74
14	Paid into State Treasury.....	1,329 74
25	Cash from Columbus Wheel & Bending Co	1,239 29
25	Paid into State Treasury	1,239 29
26	Cash from Newsom & Monypeny	941 63
26	Paid into State Treasury	941 63
Dec. 13	Cash from Columbus Chair Co.....	1,215 95
13	Paid into State Treasury	1,215 95
15	Cash from F. D. Klotts.....	665 43
15	Paid into State Treasury	665 43
17	Cash from Geo. W. Gill	846 64
17	Paid into State Treasury	846 64
21	Cash from Columbus Wheel & Bending Co	1,163 89
21	Paid into State Treasury	1,163 89
	Total for year 1887.....	\$30,770 24 \$30,770 24

During the period covered by this report, I have collected each and every account certified to me for collection, with the exception of several accounts which have been certified to me within the past few months, all of which I believe will be paid in full.

CLAIM AGAINST THE CAPITAL BROOM CO.

All of the accounts set forth in the foregoing tables have been paid in full, and the amounts collected have been duly certified into the State Treasury, with the exception of a claim against the Capital Broom Co., amounting to \$1,412.56.

This account was based upon a contract with the Capital Broom Co. for convict labor, and was entered into with the managers of the Ohio Penitentiary, October 1, 1885. The managers of the penitentiary also furnished the company with supplies as well as convict labor. About April 2, 1886, this company discontinued manufacturing, and when the claim came into my hands they had virtually abandoned the contract. Upon investigating the case, examining the contract, the bond, and all the circumstances, I had some doubt as to the solvency of the parties and my ability to collect by process of litigation. The member

of the present Board (into whose hands the matter had come from the former Board) were of the same opinion, and a number of efforts at compromise and adjustment were made.

In view of all the circumstances, the Board of Managers finally authorized me to make the best and most satisfactory adjustment that I could. Being so authorized, I finally accepted the offer of the contractors to pay \$625.00 in cash in full of all claims and demands. Before concluding this adjustment, I submitted the terms to the managers of the penitentiary, and receiving their full concurrence, I closed the account on the terms before mentioned, believing it more advantageous to the State than to engage in a protracted litigation with the sureties and principals upon the contract.

CLAIM AGAINST THE OHIO TOOL CO.

In the matter of the claim against the Ohio Tool Co., amounting to \$2,244.09, a claim was made by the contractors that they should be allowed the sum of \$31.90 by way of set off. This amount was, upon due consideration by the Board of Managers, allowed, and the balance of the account was duly paid by the contractors.

CONVICT LABOR CLAIMS.

By far the greater portion of collections, required to be made by this department, are on account of convict labor, and if due care is taken by the Board of Managers, under the present law, in regard to the making of contracts, and particularly in the matter of the sufficiency of sureties, I cannot see how the matter could be improved. The success attending the collection of these claims, during the period covered by this report, fully attests the good judgment and care of the present Board of Managers in these particulars, and, if the same careful supervision is continued, there is no need that I can see of meddling with the law.

The following is a list of actions, both civil and criminal, in the Supreme Court, together with other actions in which the State was a party, or had an interest, during the period covered by this report:

SCHEDULE OF ACTIONS.

CRIMINAL CASES IN SUPREME COURT.

Arthur E. Benedict vs. The State. Error to the Circuit Court of Meigs county. Judgment reversed.

William Dunn vs. The State. Error to the Circuit Court of Defiance county. Judgment reversed.

Robert Johnson vs. The State. Error to the Circuit Court of Richland county. Judgment affirmed.

Robert Patterson vs. The State. Motion for leave to file petition in error to the Circuit Court of Richland county. Overruled.

Oscar J. Peck vs. The State. Error to the District Court of Lorain county. Judgment affirmed.

Henry H. Heppert vs. The State. Motion for leave to file petition in error to the Circuit Court of Summit county. Overruled.

Daniel Miskell vs. The State. Motion for leave to file petition in error to the Circuit Court of Franklin county. Overruled.

John G. Heck vs. The State. Error to the Circuit Court of Montgomery county. Judgment affirmed.

John Murphy et al. vs. The State. Motion for leave to file petition in error to the Court of Common Pleas of Preble county. Overruled.

Florence Marmet vs. The State. Error to the Court of Common Pleas of Hamilton county. Judgment affirmed.

Hanson Wilson vs. The State. Motion for leave to file petition in error to the Circuit Court of Brown county. Overruled.

The State vs. Algernon Granville et al. Motion for leave to file petition in error to the Court of Common Pleas of Franklin county. Overruled. Motion for leave to file bill of exceptions. Allowed.

The State vs. Francis Kusnick. Motion for leave to file bill of exceptions to the Court of Common Pleas of Darke county. Granted. Pending.

The State vs. Elijah Nevin. Motion for leave to file bill of exceptions to the Court of Common Pleas of Ross county. Granted. Pending.

David Dille vs. The State. Motion for leave to file petition in error to the Circuit Court of Morgan county. Overruled.

Charles S. Gravelle vs. The State. Motion for leave to file petition in error to the Court of Common Pleas of Miami county. Overruled.

The State vs. Benjamin R. Brown. Motion for leave to file bill of exceptions to the Court of Common Pleas of Lake county. Granted. Pending.

John C. Hill vs. The State. Motion for leave to file petition in error to the Circuit Court of Clermont county. Overruled.

Edward Schenke vs. The State. Motion for leave to file petition in error to the Court of Common Pleas of Hamilton county. Overruled.

Geo. Fletcher vs. The State. Motion for leave to file petition in error to the Circuit Court of Wood county. Judgment reversed.

Robert Patterson vs. The State. Error to the Court of Common Pleas of Miami county. Pending.

Michael Hauck vs. The State. Error to the Court of Common Pleas of Hamilton county. Judgment affirmed.

Charles Doll vs. The State. Error to the Court of Common Pleas of Hamilton county. Judgment affirmed.

Delaney J. Bowling vs. The State. Motion for leave to file petition in error to the Circuit Court of Licking county. Overruled.

William Fenstermaker and George Slacker vs. The State. Motion for leave to file petition in error to the Court of Common Pleas of Miami county. Pending.

The State vs. John Nye. Motion for leave to file petition in error to the Court of Common Pleas of Medina county. Overruled.

Joseph Slusser vs. The State. Motion for leave to file petition in error to the Circuit Court of Highland county. Overruled.

CIVIL CASES IN SUPREME COURT.

In re Daniel J. Dalton. Error to the Circuit Court of Franklin county. Judgment affirmed.

The State ex rel. Attorney-General vs. Morton L. Hawkins et al. Quo Warranto. Judgment of Ouster.

The State ex rel. Attorney-General vs. Edwin Hudson. Quo Warranto. Writ refused.

The State ex rel. Attorney-General vs. Wm. Anderson. Quo Warranto. Judgment of Ouster.

The State ex rel. Cyrus Huling, Prosecuting Attorney, vs. I. G. Peetrey, Warden Ohio Penitentiary, and E. Kiesewetter, Auditor of State. Mandamus. Pending.

Leo. Adler et al. vs. H. N. Whitbeck, County Treasurer. Error to the Circuit Court of Cuyahoga county. Judgment affirmed.

The State ex rel. Attorney-General vs. T. McGrevy. Quo Warranto. Writ refused.

The State ex rel. D. Wilhelm vs. S. N. Todd, County Treasurer. Mandamus. Writ refused.

The State ex rel. Attorney-General vs. Hiram A. Blood et al. Quo Warranto. Settled.

The State ex rel. Attorney-General vs. Geo. A. Talbott. Quo Warranto. Judgment of Ouster.

The State ex rel. Attorney-General vs. Joseph W. Brewster. Quo Warranto. Judgment of Ouster.

The State ex rel. Richard B. Crawford vs. John McGregor et al. Mandamus. Writ refused.

Trustees of Madison township, Butler county, O., vs. The State ex rel. Danford D. Thompson. Error to the Circuit Court of Butler county. Judgment affirmed.

Trustees of Madison township, Butler county, O., vs. The State ex rel. John S. Rollins. Error to the Circuit Court of Butler county. Judgment affirmed.

The State ex rel. Jas. E. Graham vs. Abraham R. Holmes, County Auditor. Error to the District Court of Tuscarawas county. Judgment affirmed.

The State ex rel. Attorney-General vs. Charles Bryson. Quo Warranto. Judgment of Ouster.

The State ex rel. Cook & Sturges vs. F. Ottinger, County Clerk. Error to the Circuit Court of Richland county. Petition dismissed for failure to file printed record.

The State ex rel. Pierce & Coleman vs. Board of Education of Piqua. Error to the Circuit Court of Miami county. Pending.

Frank Ratterman, County Treasurer, vs. The State ex rel. A. F. Bohrer, Treasurer of Cincinnati. Error to the Circuit Court of Hamilton county. Judgment affirmed.

The State ex rel. Attorney-General vs. Corn City Mutual Fire Insurance Company. Quo Warranto. Pending.

The State ex rel. Attorney-General vs. R. O. Hinsdale et al. Quo Warranto. Writ refused.

The State ex rel. Hibbert & Schaus vs. Wm. Wall et al., Commissioners of Franklin county. Error to the Circuit Court of Franklin county. Pending.

The State ex rel. Wm. G. McCoy vs. Cincinnati Chamber of Commerce et al. Error to the Circuit Court of Cincinnati. Pending.

Levi Whitmore et al. vs. The State ex rel. Charles Leon et al. Error to the Circuit Court of Ottawa county. Pending.

Herman P. Goebel vs. The State ex rel. John B. Mannix. Motion for leave to file petition in error to Circuit Court of Hamilton county. Overruled.

Herman P. Goebel vs. The State ex rel. John B. Mannix. Motion for leave to file petition in error to the Circuit Court of Hamilton county. Overruled.

F. Springmeier et al., Board of Public Works, Cincinnati, vs. The State ex rel. Louisa F. Bowler. Error to the Circuit Court of Hamilton county. Pending.

E. D. Sawyer vs. The State ex rel. Norton T. Horr. Error to the Circuit Court of Cuyahoga county. Judgment affirmed.

The State ex rel. Wm. Widner vs. David Bowersock. Error to the Circuit Court of Shelby county. Pending.

Charles A. Herbeg vs. The State ex rel. Jacob Heinrich et al. Error to the Circuit Court of Montgomery county. Judgment reversed.

Galen C. Wise vs. The State ex rel. Jacob Weinreich et al. Error to the Circuit Court of Montgomery county. Judgment ousting Wise affirmed and inducting Weinreich reversed.

Wm. H. Johnson et al. vs. The State ex rel. Olliver Andrews. Error to the Circuit Court of Lake county. Pending.

Henry L. Osborn et al. vs. The State and John Scott. Error to the Circuit Court of Morrow county. Pending.

The State vs. John L. Whetstone, Executor, et al. Error to the District Court of Hamilton county. Case remanded to the Superior Court of Cincinnati.

The State ex rel. Michael Byrne vs. J. W. Kehm, Secretary of Enterprise Carriage Manufacturing Company, et al. Error to the District Court of Hamilton county. Dismissed.

The State ex rel. Jacob Schaufert vs. J. W. Kehm, Secretary of Enterprise Carriage Manufacturing Company, et al. Mandamus. Dismissed.

The State ex rel. Attorney-General vs. Abraham N. McConnell. Quo Warranto. Judgment of ouster and induction.

The State ex rel. Attorney-General vs. The Cincinnati, Washington & Baltimore Railroad Company. Quo Warranto. Pending.

The State ex rel. Attorney-General vs. The Cincinnati, New Orleans & Texas Railroad Company. Quo Warranto. Pending.

S. R. Shotwell vs. S. A. Moore, County Treasurer. Error to the Circuit Court of Harrison county. Pending.

The State ex rel. Attorney-General vs. Geo. W. Stockley et al. Quo Warranto. Judgment for defendants.

The State ex rel. The Berkshire Life Insurance Company vs. Henry J. Reinmund, Superintendent, etc. Mandamus. Writ awarded.

The State ex rel. The John Hancock Mutual and Sanders Life Insurance Company vs. Henry J. Reinmund, Superintendent, etc. Mandamus. Writ awarded.

The State ex rel. Everett & Dillenbaugh of the New England Mutual and Weed Life Insurance Company vs. Henry J. Reinmund, Superintendent, etc. Mandamus. Writ awarded.

The State ex rel. The Western Construction Railway Company vs. J. H. Rabbitts. Alternative writ of Mandamus. Allowed. Pending.

The State ex rel. Wm. H. Pugh, Prosecuting Attorney, vs. J. W. Brewster. Mandamus. Writ refused.

The State ex rel. J. L. Athey vs. Henry Ford. Quo Warranto. Writ allowed.

The State ex rel. F. K. Martin vs. T. J. McGranahan. Error to the Circuit Court of Hamilton county. Judgment affirmed.

The State ex rel. Attorney-General vs. James Lawrence et al. Quo Warranto. Writ refused.

The State ex rel. John N. Davis vs. Wm. F. Butler. Quo Warranto. Writ awarded.

The State ex rel. Attorney-General vs. John J. Anderson et al. Quo Warranto. Writ refused.

The State ex rel. Attorney-General vs. Theophilus P. Brown. Quo Warranto. Pending.

The State ex rel. Chatfield & Woods vs. E. Kieseewetter, Auditor of State. Mandamus. Writ refused.

The State ex rel. Munroe & Richardson vs. Board of Commissioners of Ross county. Alternative writ for Mandamus. Allowed. Pending.

The State ex rel. City of Springfield vs. Orlando F. Serviss, County Auditor. Mandamus. Writ refused.

Jeremiah Deline vs. The State. Motion for leave to file petition in error to the Probate Court of Summit county. Overruled.

The State ex rel. Calvin Ensign vs. Orville Root, County Auditor. Error to the Circuit Court of Lorain county. Pending.

The State ex. rel. City of Lima vs. W. D. Poling, County Auditor. Error to the Circuit Court of Allen county. Judgment reversed. Peremptory writ of mandamus. Awarded.

Wm. Fisher et al. vs. The State by Wm. H. Pugh, Prosecuting Attorney, ex rel. J. F. Byrne et al. Error to the Circuit Court of Hamilton county. Dismissed.

The State ex rel. Charles Herron et al. vs. Thomas G. Smith et al. Quo Warranto. Writ refused.

The State ex rel. The Fire Association of Philadelphia, Pa., vs. Henry J. Reinmund, Superintendent, etc. Mandamus. Writ allowed.

The State ex rel. The Michigan Mutual Life Insurance Company vs. Henry J. Reinmund, Superintendent, etc. Mandamus. Writ Allowed.

The Hazleton and Leetonia Railroad Company vs. the State ex. rel. the heirs and executors of Abraham Powers et al. Error to the Circuit Court of Mahoning county. Pending.

Arthur Harrell vs. The State ex rel. Mary F. Wamsley. Error to the Circuit Court of Hamilton county. Pending.

The State ex rel. Thos. F. Barrett vs. William H. Barbee, Sheriff, etc. Mandamus. Writ refused.

The State ex rel. Wm. H. Pugh, Prosecuting Attorney, vs. Thos. J. McGranahan. Error to the Circuit Court of Hamilton county. Judgment affirmed.

The State ex rel. Attorney-General vs. The Mahoning and Shenango Railway Company et al. Quo Warranto and injunction. Injunction dissolved. Pending.

The State ex rel. Trustees of O. S. & S. O. Home vs. E. Kieseewetter, Auditor of State. Mandamus. Pending.

The Board of Education of the Village of Oxford vs. The State ex rel. Perry Gibson. Error to the Circuit Court of Butler county. Pending.

CIVIL CASES IN OTHER COURTS.

In the Court of Common Pleas of Franklin county :

In re Daniel J. Dalton. Habeas Corpus. Writ refused. Judgment affirmed in the Circuit Court of Franklin county and in Supreme Court of Ohio.

The State vs. The Miami Valley Insurance Co.

The State vs. The Dayton Insurance Co.

The State vs. The Eagle Insurance Co.

The State vs. The Citizens' Insurance Co.

Demurrer to answers in above cases. Overruled. Judgment affirmed in Circuit Court of Franklin county.

The State vs. Albert Netter. Pending.

A. G. Patton vs. E. G. Coffin, Warden Ohio Penitentiary. Temporary injunction. Allowed. Pending.

The Berkshire Insurance Co. vs. Henry J. Reinmund, Superintendent, etc. Judgment for Plaintiff.

John F. Pratt et al. vs. A. W. Jeffreys et al. Dismissed.

In the Court of Common Pleas of Harrison county :

S. B. Shotwell vs. S. A. Moore, County Treasurer. Judgment for Plaintiff. Judgment reversed in Circuit Court of Harrison county. Pending in Supreme Court of Ohio.

In the Court of Common Pleas of Summit county :

The State vs. Arthur L. Conger et al.

The State vs. John F. Seiberling.

The State vs. Arthur L. Conger et al.

The State vs. Wells A. Underwood.

The State vs. Warren J. Underwood.

The State vs. Solon N. Wilson.

The State vs. James Christy.

The State vs. The F. Schumacker Milling Co.

The State vs. Louis Miller.

The State vs. John W. Baker.

The State vs. Catherine Steinel.

The State vs. Solon N. Wilson.

The State vs. Emily Ingersoll.

The State vs. The Brewster Coal Co.

The above cases are now pending.

In the Court of Common Pleas of Cuyahoga county :

Leo Adler vs. H. N. Whitbeck, County Treasurer. Petition dismissed. Judgment affirmed in Circuit Court of Cuyahoga county. Judgment affirmed in Supreme Court of Ohio.

In the United States Circuit Court, Northern District of Ohio :

The Ohio National Bank of Cleveland vs. H. N. Whitbeck, County Treasurer.

The National Bank of Commerce of Cleveland vs. H. N. Whitbeck, County Treasurer.

The Commercial National Bank of Cleveland vs. H. N. Whitberk, County Treasurer.

The Union National Bank of Cleveland vs. H. N. Whitbeck, County Treasurer.

The First National Bank of Cleveland vs. H. N. Whitbeck, County Treasurer.

The Cleveland National Bank of Cleveland vs. H. N. Whitbeck, County Treasurer.

The National City Bank of Cleveland vs. H. N. Whitbeck, County Treasurer.

The Mercantile National Bank of Cleveland vs. H. N. Whitbeck, County Treasurer.

The National Bank of Elyria vs. E. Williams, County Treasurer.

The First National Bank of Wellington vs. E. Williams, County Treasurer.

The First National Bank of Akron vs. A. M. Cole, County Treasurer.

The First National Bank of Youngstown vs. Geo. W. Canfield, County Treasurer.

The Second National Bank of Youngstown vs. Geo. W. Canfield, County Treasurer.

The Mahoning National Bank of Youngstown vs. Geo. W. Canfield, County Treasurer.

The Commercial National Bank of Youngstown v. Geo. W. Canfield, County Treasurer.

The First National Bank of Toledo vs. J. W. Kelsey, County Treasurer.

The Second National Bank of Toledo vs. J. W. Kelsey, County Treasurer.

The Toledo National Bank of Toledo vs. J. W. Kelsey, County Treasurer.

The Merchants' National Bank of Toledo vs. J. W. Kelsey, County Treasurer.

The Northern National Bank of Toledo vs. J. W. Kelsey, County Treasurer.

The First National Bank of Toledo vs. J. W. Kelsey, County Treasurer.

The Second National Bank of Toledo vs. J. W. Kelsey, County Treasurer.

The Toledo National Bank of Toledo vs. J. W. Kelsey, County Treasurer.

The Merchants' National Bank of Toledo vs. J. W. Kelsey, County Treasurer.

The Northern National Bank of Toledo vs. J. W. Kelsey, County Treasurer.

The Tiffin National Bank of Tiffin vs. — Kagy, County Treasurer.

Writ of injunction in each of the foregoing cases. Allowed.

IMPORTANT SUITS.

During the period covered by this report, a number of very important cases, in which the State was a party, have been heard and decided in the Supreme Court of Ohio. Some of these will stand as established precedents in the future, and on account of their importance as such, I may be pardoned for making a brief reference to them.

IN RE DANIEL J. DALTON.

The first in order of time was the *habeas corpus* proceeding in the case of Daniel J. Dalton.

Dalton was Clerk of the Court of Common Pleas of Hamilton county, and having in his possession the poll-book and tally-sheet of Precinct A., Fourth Ward of Cincinnati, of the October election, 1885, he was duly served with a subpoena *duces tecum* to appear before a Committee of the House of Representatives, then in session, to wit, in January, 1886, at Columbus, and to bring with him the said poll-book and tally-sheet and submit the same to the Committee on Privileges and Elections then investigating the election of members of the House. Dalton duly appeared before the Committee, but positively refused to produce the documents called for by the subpoena. The Committee reported the matter of his refusal to the House, and it thereupon ordered that he be brought to the bar of the House to answer for his contempt in refusing to obey the authority of its process. Dalton duly appeared in person and by counsel, and the case was fully argued.

It was claimed in his behalf, that the House of Representatives had no power to punish a witness for contempt or disobedience of its subpoena, and that the House had no authority to commit him into the custody of the Sergeant-at-Arms or to the jail of Franklin county for contempt of the House of Representatives. A majority of the House thought otherwise, and Dalton was ordered by the Speaker to be taken into the custody of the Sergeant-at-Arms and thence to the jail of Franklin county. He was taken into custody by the Sergeant-at-Arms, but application was at once made by his counsel to Hon. Hawley J. Wylie, one of the Judges of the Court of Common Pleas of Franklin county, for a writ of *habeas corpus*, claiming that he was unlawfully restrained of his liberty. This brought the whole question before the Court, touching the power of either branch of the General Assembly to compel the attendance of witnesses, and the production of books and

papers, when investigating the election and qualifications of members.

After a full hearing, in which all the authorities were presented to the Court, touching the prerogative of a legislative body in such cases, the Court refused the writ and ordered the witness into the custody of the Sergeant-at-Arms. The case was then taken to the Circuit Court, and then to the Supreme Court—where final judgment was rendered and the proposition definitely settled in Ohio, that:

“In all cases wherein the General Assembly or either branch of it is engaged in the prosecution of an inquiry regarding the election, returns and qualifications of its members; or, in other words, in all cases where it exercises *judicial functions*, it possesses an undoubted right to summon witnesses, to enforce production of books, papers, records, and to punish witnesses for contempt in cases of willful refusal to obey its authority.”

Pursuant to this judgment, Dalton at once appeared at the bar of the House of Representatives, submitted himself to its jurisdiction, and presented the now famous poll-book and tally-sheet of Precinct A., Fourth Ward.

THE STATE EX REL. CHAS. HERRON ET AL. VS. T. G. SMITH ET AL.

This was an action of *quo warranto* in the Supreme Court of Ohio, and involved very important constitutional and parliamentary questions.

The General Assembly on the 17th of May, 1886, passed an act to establish an efficient Board of Public Affairs in all cities of the first grade of the first-class. This act repealed an act passed March 3, 1880, creating a Board of Public Works.

The members of the Board of Public Affairs had been appointed by the Governor, and had entered upon the performance of their duties. The object of the proceeding was, in fact, to oust the members of the Board of Public Affairs and reinstate the members of the Board of Public Works, and in this behalf it was claimed that the law creating the so-called Board of Public Affairs did not receive on its passage in the Senate the concurrence of a majority of all members elected thereto.

Prior to the passage of the act of May 17th, the Senate, in the matter of the contest of the election of Messrs. Brashears, Hopple, Kuehnert and Wilson, who had received certificates of election as members of the Senate, had taken action and had declared (as the Journal shows) that the persons above named were not duly elected, and that Messrs. Hardacre, Kirschner, McGill and Richardson were duly elected and entitled to seats as Senators from Hamilton county, and it was after the first named were dispossessed of their seats and the seating of the last named

by the action of the Senate, that this act was passed. The legality of every subsequent act of the General Assembly was, therefore, involved in the hearing of this case.

It was claimed that the Senate was not a legal body; that nineteen votes were requisite to give the act a constitutional majority in the Senate, and that Hardacre, McGill, Kirschner and Richardson, who voted for the act, were not legally members of the Senate, but merely usurpers; and that without the votes of Messrs. Brashears, Hopple, Kuehnert and Wilson the act failed of its passage. It was alleged that the act of the Senate in unseating the last named parties and admitting Hardacre and others to seats in the Senate was fraudulent, and was in pursuance of a conspiracy, corruptly entered into by the presiding officer and seventeen senators.

The case was very strongly contested. Very elaborate oral arguments were submitted to the court. A majority of the court, after full consideration, decided the act of the General Assembly creating the Board of Public Affairs to be valid, holding that:

"The members so seated are, at least, *de facto* members of the house to which they belong, and the validity of the title by which they occupy their seats cannot be inquired into by the courts for the purpose of affecting the validity of laws enacted by the Legislature in which they hold seats."

The decision of the court settled the question of the *status* of the Senate. The Dow Liquor Law, all the appropriation acts, and acts authorizing the issuing of bonds, were subsequently passed and were involved in the decision of this case.

THE STATE EX REL. ATTORNEY-GENERAL VS. HAWKINS.

Messrs. Hawkins, Reis and Stevens were on April 4, 1885, appointed Police Commissioners of the city of Cincinnati by the Board of Public Works of that city. They entered upon their duties as such, and continued to act in that capacity until February 3, 1886, at which time they were duly removed by the Governor of the State. They refused to recognize his authority to make such removal, and continued to exercise the power and authority incident to the office of Police Commissioner in the city of Cincinnati. Judgment of ouster was asked against them. The power of the Governor to remove an officer for cause was involved in this action. The act of the General Assembly found in Vol. 82, Ohio Laws, p. 102, Revised Statutes, provides: "And for official misconduct commissioners may be removed."

It was claimed that this act was unconstitutional; that the General Assembly could not confer upon the Governor the power to remove for official misconduct, officers not appointed by him. It was claimed

further, conceding the validity of the statute, that the power was not legally exercised, inasmuch as the officers above named were removed without an opportunity being given them to answer.

The judgment of the court fully sustained the constitutionality of the act in question, and declared the law to be :

“ Where charges, embodying facts, in judgment of law, constitute official misconduct, are preferred to the governor, of which notice is given the members charged, and he, acting upon the charges so made, removes them from office, his act is final, and cannot be reviewed, or held for naught in this court, in a proceeding in *quo warranto*, whether he erred or not, in exercising the power conferred on him.”

NATIONAL BANK CASES.

Sometime during the year 1886 a number of National Banks in the cities of Toledo, Cleveland, Youngstown, and several other places, commenced suits in the Circuit Court of the United States against the treasurers of the several counties where these banks were respectively located. The object and purpose of these suits was to prevent the treasurers of these several counties from collecting the tax assessed against such banks, the ground of complaint in each case being that the amount so assessed was an unjust and unlawful discrimination against moneyed capital invested in national bank shares, and that real and personal property in Lucas and other counties was assessed at not exceeding sixty per cent. of its value, whereas the property of national banks was assessed at a much larger percentage of its true value. It was claimed that in a number of counties real and personal property, by uniform rule or custom, was assessed at a rate largely below its true value, and largely below that at which bank shares were assessed.

These cases were resisted by the several treasurers of the counties in which the actions had been commenced, and in consequence of the importance of these cases to the tax-payers of the State, with the advice and approval of the Governor and Auditor of State, I employed Clarence Brown, Esq., of Toledo, and Hon. James Lawrence, of Cleveland, to represent the State in the defense of these actions.

During the last summer, one or more of these cases was brought to a hearing in the United States Court at Cleveland, with the result that the Court granted the prayer of the complainants and allowed the injunction to remain.

The rule for valuing personal property for taxation is laid down by the Statutes of this State, and requires that it shall be valued at the true value thereof in money. This is certainly not the case if the judgment of the Court above referred to is to furnish the rule for the valuation of moneyed capital invested in banks. The question adjudicated in

these cases is now pending in the Supreme Court of the United States, whose decision will be final and conclusive, and I have great confidence that the decision of the Circuit Court for the Northern District of Ohio will be reversed.

CANAL SUITS AT AKRON.

Some time last spring the Board of Public Works employed the county Surveyor of Summit county to make a survey and define the boundaries of the lands adjacent to the canal in the City of Akron. This survey was made with a great deal of care, and the report of the engineer with the survey and plats attached (now on file in the office of the Public Works) shows that many acres of valuable land and lots belonging to the State of Ohio and part of the canal property, have been encroached upon and appropriated by adjacent proprietors and lot-owners, who now claim title in fee simple to such land. In some cases buildings had been erected, at other points manufacturing establishments, warehouses, docks and railroad switches have been placed upon the lands of the State and are now adversely occupied. Originally these lands were of small value, but as the town has improved and increased in population and wealth, this canal property has increased in value until at the present time the property so adversely claimed by trespassers represents many thousand dollars in value. In some cases the lands so belonging to the State have been sold and conveyed for large pecuniary considerations.

After the filing of the Surveyor's report and his plats and descriptions, the Board of Public Works, by resolution, instructed the Attorney-General to institute suits, to recover these lands, against all parties shown by the survey to have trespassed upon the property of the State. Acting under these instructions, I caused seventeen ejectment suits to be brought in the Court of Common Pleas of Summit county, in the name of the State, against as many different defendants. The issues were made up, and at the recent term of the Court of Common Pleas of Summit county, the first of these actions came up for trial. In view of the importance of these cases, I gave the attorneys employed by the State such personal assistance as I could.

The case was tried to a jury—the various defendants combining to some extent in the defense of this action—very properly regarding the same as a test case. Many witnesses were examined, and the result of the trial was, that verdict in behalf of the State was rendered by the jury for all of the land claimed in the petition. This verdict the judge, on motion, subsequently set aside for the reason, as stated by him, that he had erred in one respect in his charge to the jury. I express no

opinion as to this action of the Court except to say, that I would not have made the slightest objection to the change in the instruction which he desired to make. The verdict, in my judgment, would have been the same. The case will, therefore, be for trial with the other cases at the coming term of the Court in that county. I feel quite confident that the State will succeed in maintaining its right and title to these lands.

THE STATE VS. ALBERT NETTER.

On the 24th day of March, 1886, the Commissioners of the Sinking Fund of Ohio, pursuant to the act of the General Assembly, passed April 17th, 1885, entered into a contract with Albert Netter, of Cincinnati, Ohio, for the sale or exchange of the bonds of the State to redeem the certificates of the funded debt of the State, payable on the 31st day of December, 1886.

The Commissioners of the Sinking Fund had previously duly advertised for the sale or exchange of such certificates, and Albert Netter being the best bidder and the contract being duly secured, the contract was awarded to him.

Between that date and the maturity of the certificates, to wit: on the 31st day of December, 1886, a number of these outstanding certificates were delivered up and canceled, and new certificates of the State for an equal amount were issued, as provided by the act; but the amount of such bonds so delivered up was small in the aggregate, owing to the inability of the parties to obtain possession of the outstanding certificates. This had been anticipated at the time the contract was made, and a clause was accordingly inserted in the contract, that in case such exchange could not be made, the parties should pay to the State, on the 31st day of December, 1886, the amount due on said outstanding certificates and accept the new bonds of the State in lieu thereof. No question was ever raised as to the rate of interest on the amount due the State upon the contract until the 31st day of December, 1886, at which time the Fund Commissioners appeared at the American Exchange Bank of New York. Mr. Netter was also present, and informed the Commissioners that he was unable to obtain the outstanding certificates, but that under the optional clause of the contract, he was ready to perform the requirement thereof by paying to the State the amount therein provided for, to wit: \$1,833,142, and accordingly made tender of the same. The amount so tendered was \$27,323 less than the sum which the Commissioners of the Sinking Fund claimed to be due upon the contract. Mr. Netter, on the other hand, claimed that the amount so tendered was a full performance of the contract, and thus an issue was

presented touching the meaning of the contract in that particular. The creditors of the State were many of them present with their certificates, demanding payment thereon, and the Commissioners had no funds to meet the same, except the amount that had been provided for in the contract. There was no time to settle the dispute between the State and the contractors. The credit of the State was at stake, and the alternative was presented to the Commissioners of having its certificates of indebtedness protested for non-payment, or accepting the amount tendered by Mr. Netter, and leaving the amount in dispute to be subsequently adjusted by action, arbitration or otherwise, as might be agreed upon.

They adopted the latter alternative and accepted the amount tendered as so much paid upon the contract, and with the sum thus paid, they took up the outstanding certificates as they were presented, and on the 10th day of June, 1887, the Commissioners commenced suit against Albert Netter in the Court of Common Pleas of Franklin county, Ohio.

Hon. George K. Nash was employed by the Commissioners to assist the State in the prosecution of this claim, and it was upon his written opinion—sustaining the construction of the contract claimed by the Commissioners—that the action was commenced. The suit is now pending.

RECOMMENDATIONS, ETC.

CORPORATIONS.

During the past two years, ending on the 15th day of November, 1887, there have been filed in the office of the Secretary of State two thousand one hundred and thirty three certificates of incorporation. A large number of applications have been referred to me, particularly where banking features were connected with the proposed incorporation. Instead of incorporating under the act of the General Assembly relating to banking, numerous applications have been referred to me when the application was to be incorporated under the general law in order to carry on at least some of the business of banking. In all such cases I have advised the Secretary of State to reject the application, unless it was made under the special statute upon that subject, where adequate protection is provided for.

Corporations, when organized for legitimate and proper purposes, are useful, and their creation to be encouraged, but the large number of incorporations in this State within the last two years, and the questionable purposes of some of them, lead me to respectfully suggest an amend

ment or modification of section 3235 of the Revised Statutes. This section reads :

“Corporations may be formed in the manner provided in this chapter for any purpose for which individuals may lawfully associate themselves, except for dealing in real estate, or carrying on professional business; and if the organization is for profit it must have a capital stock.”

In the single matter of “Bohemian Oats Swindles,” the Secretary of State is invested with some authority to refuse to file the application, but in respect to all other subjects, a very wide door is open to the creation of corporations by simply stating on the face of the certificate some business or purpose which is not on its face unlawful.

Again, applications have been referred to me where the object was the consolidation of two or more incorporated companies.

The law provides that this may be done in certain cases. Section 3864 permits two or more corporations, described in section 3862, to be consolidated in the manner prescribed in sections 3381 and 3382. These sections of the Statutes relate to the consolidation of railway companies, and section 3379 only permits companies to consolidate where the lines of roads are so connected that the cars may pass from the line of one company to the line of the other without break or interruption. Section 3300, on this subject, however, preserves competition, and in express terms *prevents* the consolidation of parallel and competing lines; and my judgment upon this subject is that the attempted consolidation of incorporated companies for the purpose of forming combinations of capital or so-called “trusts” for the purpose of limiting production and advancing prices, or, in other words, cutting off competition, should be prevented by legislation similar to that which prevents the consolidation of competing lines of railways.

The Court of Common Pleas of Fairfield county has recently decided that, under the above mentioned sections, natural gas companies may consolidate. If this is so, the same rule may be applied to the consolidation of all other gas companies, as well as other industrial corporations in the State. Such consolidations, it seems to me, if permitted, are in the interest of monopoly and special privilege, and opposed to sound public policy.

INSURANCE.

Acting under the direction of the Superintendent of the Department of Insurance, I commenced suits in the name of the State, in the Court of Common Pleas of Franklin county, against the following insurance companies: The Miami Valley Insurance Co., the Dayton

Insurance Co., the Citizens' Insurance Co., and the Eagle Insurance Co., incorporated under the laws of Ohio, and doing business in this State.

Section 3654, Revised Statutes, among other things, provides :

"The president, or vice-president, and secretary of each insurance company, organized under any laws of this state, shall annually, on the first day of January, or within thirty days thereafter, prepare under oath, and deposit in the office of the superintendent of insurance, a statement of the condition of such company on the thirty-first day of December then next preceding, etc."

The above named companies, although specially requested by the Superintendent of Insurance to make report in accordance with this section, refused, claiming that the companies were incorporated under the Constitution of 1802, and not under the present State Constitution, and that this act was in the nature of the change of their corporate rights, and, therefore, an infringement of the Constitution.

My predecessors in office, Judges West and Nash, had previously advised (as their recorded opinions show) that these companies were amenable to this provision of our existing law, and that the claim set up by them was untenable; and, as this accorded fully with my own views of the law, I commenced the actions against them under and by virtue of section 3655 of the Revised Statutes, as amended, Ohio Laws, Vol. 83, p. 416. To the petitions filed, the insurance companies filed answers respectively, setting up their incorporation prior to the adoption of our present constitution, and to these answers I filed demurrers.

The cases were fully argued by counsel, and upon consideration the court overruled the demurrers filed by the State. This judgment was affirmed by the Circuit Court of Franklin county. In overruling the demurrers of the State, the court held, in substance, that the insurance companies were liable to make a report to the Superintendent of Insurance, and that the claim of the insurance companies, to be exempted from the operation of the section of the Revised Statutes, requiring them to file annual reports, on the ground of a violation of the constitution, was untenable.

In view of this holding, I would recommend an amendment of section 3655 of the Revised Statutes. An amendment was, in fact, drawn by my predecessor in office, Hon. James Lawrence, and was intended to reach the case and to authorize such action as those above mentioned. The act was passed, but by an oversight it was not signed by the Speaker of the House or the President of the Senate.

I deem it important that *all* insurance companies doing business in Ohio should be held to a strict compliance with the law requiring the filing with the Superintendent of Insurance of an annual report, showing in detail the exact financial condition of the company, to the end

that people doing business with such companies may know what the standing of the company is and the security it affords.

COST ON CONVICTION OF FELONIES.

Another matter that I think is worthy of consideration is, whether sections 7334-7337 of the existing laws in cases of felony, should not be changed. As the law reads, the cost bills in cases of this character are made out by the clerk of the county, and when the prisoner is brought to the Penitentiary, the sheriff brings his cost bill with him and presents it to the Auditor of State for payment. In some instances these bills are enormous, and constitute a heavy draft upon the State Treasury. The Auditor of State can have no personal knowledge of the matter and has nothing to guide him in allowing or disallowing fees, except the certificate before him; and it is a question whether, in many cases, it would not speed the trial and save a considerable portion of the expense if the amount was to be paid by the county where the accused was tried. In the aggregate these expenses are paid by the tax-payers of the State, and it would make no difference whether the amount was paid out of the county fund or out of the State Treasury.

I am led to make the above suggestions from having my attention called, by the Auditor of State, to quite a number of these cost bills, and by observing the large amounts paid out where the sums were apparently needlessly expended, and where, perhaps, greater care and vigilance on the part of county officers would have resulted in a great saving of money.

CANALS AND CANAL LANDS.

During the winter of '86-7, the Board of Public Works requested me to give them a written opinion touching the power and right of the Board to lease or convey any of the lands of the State, adjacent to the canals, to any person or corporation. This inquiry doubtless grew out of the fact that a number of railroad corporations were engaged in building a so-called belt line railroad at Akron, Ohio, and in order to do so desired to pass a part of the distance over lands of the State on the berme bank side and adjacent to the canals. The application of the railroad companies was in writing, and is now on file in the office of the Board of Public Works. This application was referred to me, in connection with the request for an opinion, together with maps, plans and drawings. Having carefully considered the matter, I gave the Board of Public Works a written opinion, which is now on file in the office of the Board, and is also spread upon the records of this Department. Before giving this opinion, I submitted it to the Governor of the State. In

this opinion I simply advised that, where an application is made by a railway company, under section 3317, Revised Statutes (under which this application was made), the Board of Public Works may, in their sound discretion, approve plans for crossing a basin or wide-water parallel with the canal, as well as approve plans for passing directly over the canal. The application was made wholly under this section, and in this opinion I fully protected the rights of the State, by advising that the Board of Public Works had no power or authority to transfer, lease or grant any right of way to any person or corporation in or upon any of the lands of the State.

The members of the Board, however, upon their own responsibility and without my advice, not only granted the right to the railroad company to cross the basin by a bridge or trestle, as provided in section 3317, but entered into a written agreement with the railway company or companies, permitting them to put down a railroad track for some distance on the berme bank of the canal at Akron, the railroad company stipulating with the Board to occupy the same, subject to the approval of the General Assembly. In other words, they agreed with the Board that if it was the will of the General Assembly, after full investigation, that they should vacate the land, they would take up their tracks at once, or they would pay to the State whatever consideration or rental the General Assembly deemed just in the premises. A bond was given, as I understand it, to the Board, for the due performance of this agreement. I did not advise the making of this contract—in fact, that matter was not submitted to me.

When the General Assembly convened in January last, the Committee on Public Works of the House was instructed to make investigation. They visited the lands in question, the location of the road, took into consideration the circumstances of the case, and made their report. Subsequently a resolution was introduced in the House, instructing the Attorney-General to bring suits for the purpose of ousting these railroad companies from their occupancy of these lands. The resolution failed upon its passage, and there the matter stands for the present.

Perhaps a further statement in this connection may be of some importance.

The Ohio canal was constructed from the city of Cleveland to the town of Portsmouth under a legislative act passed in 1825. It created a Board of seven Commissioners, who were authorized and empowered to lay out the canal and to take, enter upon and appropriate such lands as were deemed necessary for the bed of the canal, towing path, berme bank, waste-weir, etc. The act gave the State of Ohio not merely an easement, but an absolute title in fee simple to all the lands thus entered

upon and actually taken for canal purposes by the Commissioners. The act further provided that all persons claiming damages for land so taken, could make their claims in writing to the Commissioners within a certain time, and the decision and award of the Commissioners was in all cases final. If no claim was made within the time specified, such persons were deemed to have waived all claim.

The canal was completed some time in 1827. Lands were very cheap in that early day, and the consideration of having a canal through the State was of far greater importance to the people than the value of the land taken. It so happened that in the construction of the canal, a towing path was provided for, but for the most part on the berme-bank side no bank was constructed to confine the water to any regular width. So that on that side, when the canal was filled with water, it was permitted to flow out to the natural boundaries. In many cases there were thus formed basins or wide-waters and reservoirs, where the water was stored in large quantities to supply the level of the canal below.

There are no deeds on record, and in fact no surveys or descriptions on file in the office of the Board of Public Works or in the records of any county through which the canal passes, defining or describing the lands taken by the State. The title of the State is based entirely upon the act of 1825, and the canal boundaries can be shown only by the recollection of witnesses.

The matter of the title of the State has been adjudicated by the Court of Common Pleas of Cuyahoga county, as well as by the Circuit Court in that district. To this may be added the determination and decision of a Board of Commissioners appointed under an act of the General Assembly to fix the boundary line of the canal in the city of Cleveland, where there was a contest as to the line between the State and adjacent landowners. This Board was composed of Hon. Charles Peneywell, Hon. Luther Day and Chas. E. Strong, engineer. The conclusion of law arrived at by this Board and set forth in a very able report, as well as the decision of the Court above mentioned, is to the effect that the State acquired a title in fee simple to all lands actually taken in the construction of the canal, and that this right and title extended to basins, reservoirs and waste-weirs, where the land was actually covered by water, but not to a sufficient depth for purposes of navigation.

It must be apparent that all along the line of the canal, as well as in the city of Cleveland and Akron, there are lands belonging to the State that have thus gradually been encroached upon, taken and occupied by individuals who now claim title thereto by occupancy. The statute of limitations does not run against the State, but it must be very

clear that if the State desires to maintain its title to these lands, which have by this time become very valuable, it must do so very soon, as the number of persons who have a knowledge of the actual appropriation of 1827 is becoming quite small. It will not be long until none are living who can testify, from recollection, to the facts necessary to show the title of the State.

In my judgment, it would be a wise thing to cause a full and complete survey to be made of the lines of the canal and the proper steps taken to put the State in possession of its property.

As the law stands, neither the Board of Public Works nor any State officer can make any transfer, conveyance or lease of such property. In the cases of which I have made mention, there are instances where buildings valuable for manufacturing purposes have been placed in whole or in part at least upon lands within the canal boundaries. There are doubtless other cases on the canal of a similar nature. An action of ejectment in such cases would work unnecessary hardship, and perhaps destruction of property, inasmuch as there could be no lease, conveyance or other disposition made of the land so unlawfully encroached upon. In an action of ejectment where the State succeeds in proving title, whatever improvements or erections upon the lands so occupied will probably follow the judgment, unless authority is given by the General Assembly to some board or tribunal to make an appraisalment, and make such disposition of the land or property as may be just and equitable, where it is not actually necessary for purposes of navigation

THE DOW LIQUOR LAW.

This act was passed May 14, 1886, and immediately upon its passage I was applied to by parties from all sections of the State, to give constructions in regard to the practical enforcement of the law. Very many intricate and important questions arose, and in many cases shrewd devices were invented for the purpose of evading the law or some of its features.

In the first place, the act was resisted in its entirety on the alleged ground of its being in contravention of the Constitution of the State. The payment of the tax provided for was resisted in several counties—notably in Cuyahoga and Hamilton counties.

A test case was finally made in the courts of Hamilton county, namely, that of Anderson vs. Brewster. In this case all the questions were duly presented in which the act was claimed to be unconstitutional and illegal. The case came to the Supreme Court of Ohio on a petition in error, and after full hearing of all the parties the court held:

"1. Under the second section of the statute of May 14, 1886, known as the Dow law (83 Ohio Laws, 157), a valid lien is created upon the real property when the tenant holds under a lease written or parol, made after the passage of the statute.

"2. The assessment imposed by the first section of the statute is not in conflict with the second section of the twelfth article of the constitution.

"3. The statute, so far as it provides for an assessment or tax upon the business of trafficking in intoxicating liquors, is not, in effect, a license law and not within the inhibition of the eighteenth section of the schedule to the constitution."

At the last session of the General Assembly, the act was amended by what is known as the "Pavey Amendment." This amendment was designed to prevent sales by manufacturers through so-called agencies at places other than the manufactory.

The law, having been declared valid in all respects, has been very generally observed throughout the State and, so far as I can discover, has given very general satisfaction, and has accomplished the end designed and set forth in the title, namely, "An act providing against the evils resulting from the sale of intoxicating liquors."

There seems to be some doubt as to the meaning of the phrase "prescriptions issued in good faith by reputable physicians in active practice." I find that in some cases physicians give what is called a "standing prescription," upon which the holder applies for and obtains liquor even where there is a local prohibitory ordinance, and where it is quite apparent that such liquor is used as a beverage instead of a medicine. In my opinion, the amendment offered by Senator Reed, when the act was under consideration in the General Assembly, would have prevented the conflict of opinion which has arisen regarding the effect and duration of a physician's prescription.

ACT RELATING TO CHALLENGE OF JURORS IN CRIMINAL CASES.

In my judgment, and in so far as I have had opportunities to judge, the criminal laws of this State are, as a rule, being satisfactorily administered, and any changes made in the criminal laws, however meritorious in themselves, are of no very great importance to the general public.

The act passed March 18, 1884 (known as the "Pruden Amendment"), has had a beneficial effect in practice in securing in criminal causes juries of intelligence and fairness.

Prior to this amendment, when a proposed juror stated that he had formed or expressed an opinion as to the guilt or innocence of the accused, he was *prima facie* incompetent, and it was error in the court to permit him to serve, unless the presumption of incompetency was removed by showing that his opinion was formed from reading mere newspaper statements, communications, comments or reports, or upon

rumor or hearsay, and not upon conversations with witnesses of the transaction, or reading reports of their testimony. This resulted in the consumption of much time as well as a large expense in ascertaining the opinion of the juror, and from what source he derived his information. In many cases the foundation for proceedings in error was adroitly laid by these preliminary proceedings. Now, however, the whole subject of the opinion of a proposed juror is submitted to the judgment of the court presiding at the trial, and the result is that even in the most important cases, where the nature of the crime has attracted the greatest attention, and the facts have been widely published, by conversation and newspaper reports, there is no difficulty in speedily securing an intelligent, fair and entirely impartial jury.

Appended hereto is an abstract of the statistics of crime, compiled from the reports of the several prosecuting attorneys of Ohio, made to this office for the year ending July 1, 1886, and July 1, 1887. Quite a number of prosecuting attorneys have failed to make the report enjoined upon them by law, although blanks were furnished and they were urgently requested so to do. This department has, however, no means of compelling these reports to be made. Absolute accuracy and consistency in these statistics is not claimed, as some of the reports were very carelessly drawn, and the methods adopted in their preparation have not been uniform.

About four hundred written opinions have been rendered by me during my term of office, which were deemed of sufficient importance to be spread upon the records and properly indexed. The number of oral opinions I have been called upon to give is largely in excess of this number. The ordinary correspondence of the office has been very extensive and important in character.

In submitting this report I desire to mention Mr. K. A. Flickinger, who for two years has been a valuable assistant in the office—always faithful, obliging and competent.

Respectfully submitted.

J. A. KOHLER,
Attorney-General.

STATISTICS OF CRIMES—Concluded.

Counties.	No. of indictments for felonies.	No. of convictions of felonies.	No. of indictments for misdemeanors.	No. of convictions of misdemeanors.	Amount of fines imposed.	Amount of fines collected.	Amount of costs incurred.	Amount of costs collected.
Madison	6	3	8	6	\$61 00	\$5 00	\$201 04	\$187 98
Mahoning	19	10	4	10	693 00	36 00	3,769 48	2,560 88
Marion								
Medina	8	5	12	12	440 00	405 00	2,032 92	687 59
Meigs	16	5	34	14	280 00	93 00	2,487 90	76 57
Mercer	9	2	11	8	1,185 00	90 00	2,597 04	1,756 61
Miami	34	16	54	52	989 00	50 00	4,262 22	1,965 46
Monroe	6	6	27	27	692 00	462 00	885 59	317 88
Montgomery ..	40	26	6	5	25 00		2,342 48	35 22
Morgan	1		28	22	326 00	216 06	501 46	173 20
Morrow	7	2	5	1	5 00	5 00	1,669 49	1,435 80
Muskingum ...	22	10	23	16	725 00	707 95	6,306 50	3,891 20
Noble			19	14	580 00	200 00	390 60	19 75
Ottawa	9	3	8	11	46 00	31 70	604 50	76 95
Paulding	8	6	1	1	25 00		604 45	
Perry								
Pickaway	25	13	10	11	90 00	70 00	3,605 96	102 40
Pike	2	2	31	28	240 00	103 00	874 95	365 61
Portage	14	8	23	20	570 00	460 00	2,896 22	398 81
Preble	17	10	33	30	340 00	105 00	2,096 02	1,397 08
Putnam	7	2	19	14	385 00	235 00	827 44	115 58
Richland	19	5	8	9	640 00	480 00	1,428 21	65 25
Ross	17	5	19	6	85 00	10 00	2,080 83	8 69
Sandusky	20	3	13	10	80 00	5 00	1,668 83	27 97
Scioto	12	10	31	27	850 00	549 18	3,194 14	1,822 89
Seneca	12	5	9	12	70 00	55 00	632 18	88 60
Shelby								
Stark								
Summit								
Trumbull	9	4	3	3	70 00	50 00	220 61	94 20
Tuscarawas....	5	3	38	34	955 00	780 00	957 96	157 28
Union	6	5	20	19	130 00	19 40	872 75	96 17
Van Wert	10	6	21	12	390 00	25 00	1,801 68	1,439 48
Vinton	10	1	26	15	239 00	25 00	814 75	3 45
Warren	7	3	31	27	1,045 00	365 00	1,779 58	1,193 01
Washington ...								
Wayne	18	14	22	19	316 00	236 00	2,546 14	3,116 15
Williams	3	2	12	11	2,552 00	255 00	694 50	322 86
Wood	12	4	29	13	115 00	40 00	2,071 60	38 27
Wyandot	10	7	5	6	155 00	12 60	879 24	533 48

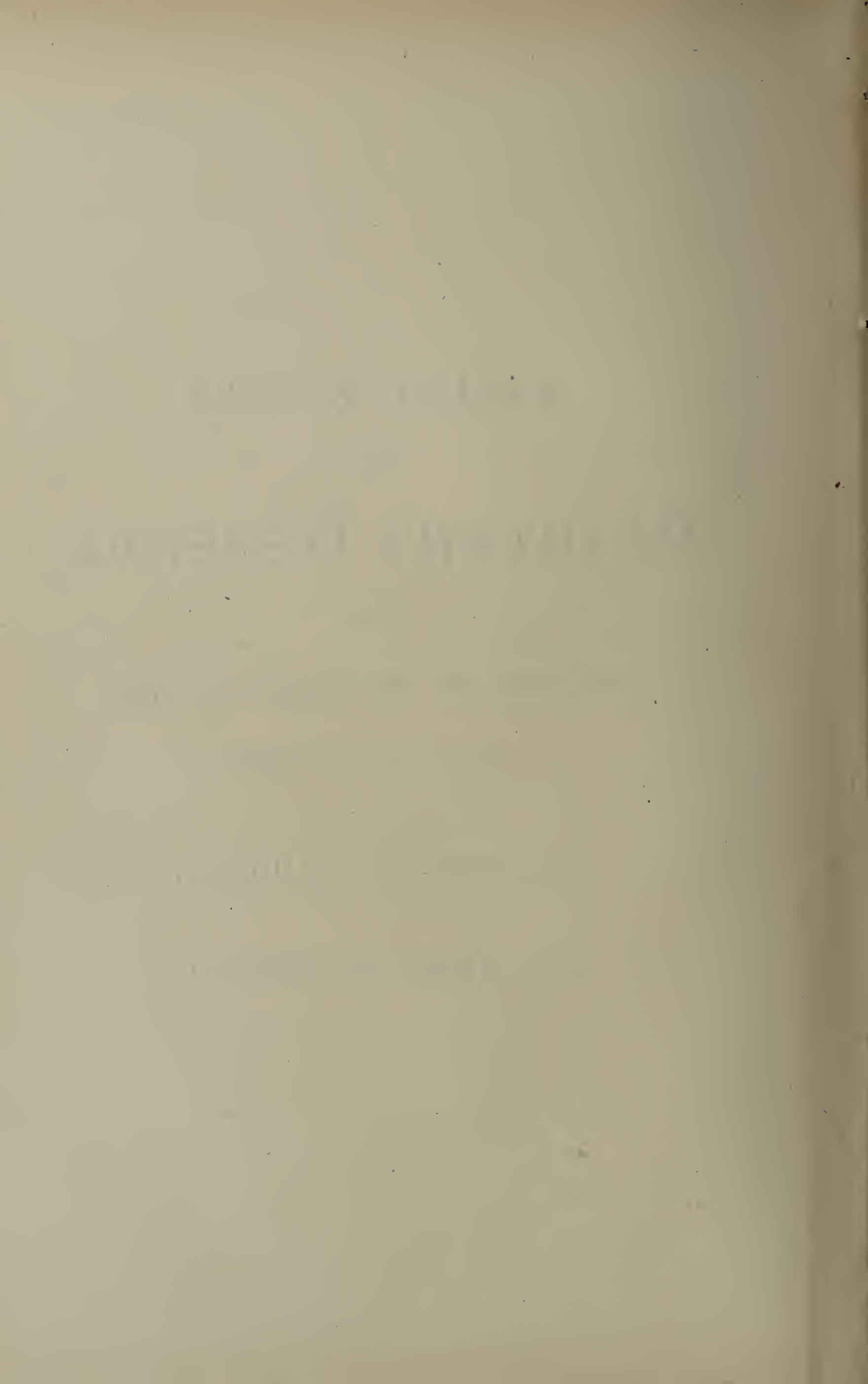
STATISTICS OF CRIMES—Concluded.

Counties.	No. of indictments for felonies.	No. of convictions of felonies.	No. of indictments for misdemeanors.	No. of convictions of misdemeanors.	Amount of fines imposed.	Amount of fines collected.	Amount of costs incurred.	Amount of costs collected.
Madison	5	5	8	8	\$140 00	\$55 00	\$905 59	\$666 67
Mahoning	15	9	10	13	206 00	158 87	681 30	228 74
Marion								
Medina	5	1	16	10	660 00	455 00	806 70	226 68
Meigs	19	3	24	15	210 00		384 75	103 54
Mercer	5	4	15	7	85 00		1,484 31	35 00
Miami	16	11	22	19	701 00	160 68	2,182 45	1,263 21
Monroe			60	41	841 00	811 00	755 28	738 17
Montgomery ..	29	24	8	7	37 00		1,729 62	45 00
Morgan			14	13	430 00	175 00	215 36	105 31
Morrow	8		23	4	350 00	50 00	644 51	166 62
Muskingum ..	10	7	19	17	515 00	465 00	2,500 42	2,363 82
Noble	4	4	18	12	560 00	103 60	1,662 12	1,445 18
Ottawa	5	5	3	3	10 00	10 00	990 86	6 40
Paulding	7	4	11	6	110 00	45 00	4,123 22	38 71
Pickaway	5	5	5	5	140 00	35 00	3,703 02	51 98
Pike	4	3	26	23	537 00	443 51	868 04	444 44
Portage								
Preble	8	3	33	30	425 00	235 00	798 43	258 43
Putnam	5	4	12	10	141 00	141 00	763 49	689 22
Richland	15	4	8	6	215 00		563 94	
Ross	18	5	24	16	516 00	150 00	3,152 24	157 28
Sandusky	23	8	13	13	160 00	35 00	2,962 91	8 68
Scioto	12	4	22	23	520 00	245 00	1,701 59	1,064 90
Seneca	20	6	11	6	10 00		2,034 92	
Shelby	12	3	21	16	330 00	135 00	893 55	173 83
Stark								
Summit	25	9	13	15	477 00	300 00	4,923 52	554 02
Trumbull	10	5	3	3	35 00	35 00	1,881 17	56 29
Tuscarawas ...	11	4	30	24	669 00	649 00	638 25	193 18
Union	6	4	9	1	100 00		533 94	66 05
Van Wert	7	7	31	30	630 00	405 00	1,567 94	1,191 79
Vinton	18	5	16	15	154 00	20 00	6,036 00	36 80
Warren	5	2	28	21	910 00	725 00	1,791 67	167 63
Washington ..	19	7	23	22	380 00	190 00	1,676 01	102 18
Wayne	4	4	11	11	158 00	55 00	472 97	248 43
Williams	2		7	5	145 00	50 00	946 76	24 62
Wood	18	3	18	3	20 00		1,178 99	
Wyandot	17	8	11	12	320 00	230 00	2,641 83	412 53

ANNUAL REPORT
OF THE
ADJUTANT GENERAL,
TO THE
GOVERNOR OF THE STATE OF OHIO,
FOR THE YEAR 1887.

PUBLISHED BY AUTHORITY.

H. A. AXLINE, ADJUTANT-GENERAL.



GENERAL HEADQUARTERS, STATE OF OHIO,
ADJUTANT-GENERAL'S OFFICE,
COLUMBUS, November 15, 1887.

His Excellency, J. B. FORAKER, Governor and Commander-in-Chief:

SIR: In compliance with law, I have the honor to submit herewith, my report for the year ending November 15, 1887.

I am, very respectfully,

Your obedient servant

H. A. AXLINE,
Adjutant-General.

OHIO STATE ROSTER FOR 1887.

HIS EXCELLENCY, JOSEPH B. FORAKER,
Governor and Commander-in-Chief.

MAJOR-GENERAL HENRY A. AXLINE,
Adjutant-General, Inspector-General and Chief of Staff.

BRIGADIER-GENERAL ASA S. BUSHNELL,
Quartermaster-General and Commissary-General.

BRIGADIER-GENERAL ASAHEL W. JONES,
Judge-Advocate-General.

BRIGADIER-GENERAL HENRY J. HERRICK,
Surgeon-General.

COLONEL WILLIAM S. WICKHAM,
Assistant Adjutant-General.

COLONEL J. LACY PIERSON,
Chief of Engineers.

Aides-de-Camp,

COLONEL LOWE EMERSON,

COLONEL ARTHUR L. FOGG,

COLONEL HARRY E. MEAD,

COLONEL GEORGE P. WALDORF,

COLONEL GEORGE L. COUCH,

COLONEL HARRY C. SHERRARD,

COLONEL CHARLES E. GROCE,

COLONEL CORTLAND L. KENNAN,

COLONEL MOSES H. NEIL,

COLONEL FLOYD L. SMITH.

ADJUTANT-GENERAL'S OFFICE.

MAJOR-GENERAL HENRY A. AXLINE,
Adjutant-General.

COLONEL WILLIAM S. WICKHAM,
Assistant Adjutant-General.

JOHN W. CHAPIN,
Chief Clerk.

CHARLES G. BROWN,
Assistant Clerk and Stenographer.

JOHN H. REES,	}	<i>Transcribing Clerks.</i>
ALEX. C. CAINE,		
JOHN W. SCOTHORN,		
JOSIAH B. ALLEN,		

HENRY A. GUITNER,
Superintendent of Arsenal and Book-keeper.

W. O. TOLFORD,
State Agent to settle War Claims against the Government.

ANNUAL REPORT.

OHIO NATIONAL GUARD.

At the close of the fiscal year ending November 15, 1886, the organization of the Ohio National Guard consisted of eighty-nine (89) companies of Infantry and eight (8) batteries of Light Artillery, aggregating 5,775 officers and men. The force at this date, November 15, 1887, consists of eighty-nine (89) companies of Infantry, eight (8) batteries of Light Artillery and one (1) troop of Cavalry, aggregating 5,694 officers and men, a decrease of 81 during the year.

The company and battery organizations are attached to regiments as follows :

First Regiment of Light Artillery, eight (four gun) Batteries.

First Regiment of Infantry, eight companies.

Second Regiment of Infantry, nine companies.

Third Regiment of Infantry, eight companies.

Fifth Regiment of Infantry, eight companies.

Sixth Regiment of Infantry, eight companies.

Eighth Regiment of Infantry, eight companies.

Ninth Battalion of Infantry, three companies.

Thirteenth Regiment of Infantry, eight companies.

Fourteenth Regiment of Infantry, eleven companies.

Sixteenth Regiment of Infantry, eight companies.

Seventeenth Regiment of Infantry, nine companies.

Unattached organizations: One company of Infantry, one troop of Cavalry.

The organization of the National Guard has reached a substantial and permanent basis, and very few changes are necessary to keep the force in an efficient condition. The average age of the organization now in existence is about nine years; all companies of a temporary character have long since been disbanded, and the permanency of the force now in existence can be relied upon for years to come, if a proper support is rendered by the State. No organizations have been disbanded during the year, and no new ones have been added to the force. The First Cleveland Troop of Cavalry, heretofore existing under authority of a special law (Section 3040 Revised Statutes), was regularly mustered into the National Guard service September 10th. This cavalry organization has reached a high degree of perfection, and ably represents that arm of the service in the Guard.

The Seventh Regiment of Infantry was consolidated with the Thirteenth Regiment May 11th, and several transfers of companies made to complete regimental organizations reduced below the two battalion basis. This consolidation and these transfers are fully set forth in General Orders No. 5, printed elsewhere in this report.

The General Assembly appropriated twelve thousand five hundred dollars (\$12,500) to pay for uniforms for the current year. This amount was entirely inadequate to meet the immediate wants of the service. The twenty-five thousand dollars (\$25,000) asked for in the estimate of last year were absolutely needed to put the Guard in proper shape for camp. The reason assigned by the committees of the Legislature for reducing the appropriation for uniforms was, that part of the appropriation made by the general government, for arming and equipping the militia, would be available for that purpose. This did not prove to be the case, and the Guard was left in a deplorable condition in this respect.

The clothing board awarded the contract for uniforms to the M. C. Lilley & Co., that firm being the lowest bidder, at \$7.85 for each suit, complete, according to samples and specifications furnished. Under this contract 1,972 blouses, 2,179 trousers and 1,948 caps were furnished and issued to the troops, at a cost of \$16,915.34.

This number of uniforms was found absolutely necessary to replace those that could not be made serviceable by cleaning, renovating and patching, and even then, in many cases, companies were required to purchase additional uniforms from company funds, or take men into camp in citizens' clothes. The deficiency of \$4,415.34, created in this fund, was made with the approval of the Governor. The uniforms furnished during the year are of good quality, and they were issued as the exigencies of the service required. Many of the uniforms still in the possession of the Guard are worn out from long and constant use. The frequency with which the troops have been called into active service, and the nature of the service rendered, have proved disastrous in this direction. The interest of the Guard, and I might say almost its very existence, requires these uniforms to be replaced at an early date. A liberal appropriation is recommended for that purpose.

OVERCOATS AND BLANKETS.

The General Assembly at its last session appropriated the sum of \$5,000 for overcoats and blankets. There have been purchased under this appropriation and issued to the troops, 425 artillery overcoats, and 990 blankets. About 500 overcoats and 2,000 blankets are yet needed to supply the Guard.

EQUIPMENTS.

There have been purchased during the year, under the provisions of House Joint Resolution No. 72, 1885, 3,900 knapsacks, 4,500 canteens, 900 camp kettles, 1,000 mess pans.

These stores have largely been issued to the troops, and are supplying a want long felt in the service.

CODE OF REGULATIONS.

On the 21st of March, under the provisions of Special Orders No. 28, a board of officers was appointed for the purpose of revising the Code of Regulations for the government of the Ohio National Guard. This board consisted of Colonel John C. Entrekin, 6th Infantry ; Lieut. Colonel James E. Shellenberger, 3d Infantry, and Major Alonzo B. Coit, 14th Infantry. The board convened soon thereafter, and on the 9th of April submitted their report for approval and publication. One thousand copies of the regulations, as revised, were printed and bound in cloth. The book is a handsome sixteen mo. volume of 216 pages. The thanks of the whole National Guard service of the State are due to the board charged with the revision of the code. They have presented to the Guard a compendium of military law that is not excelled by a similar publication in any other State in the Union.

BUREAU OF MILITARY STATISTICS.

The good work of this division, commenced years ago, has been continued during the past year with energy and care. Progress has been satisfactory, and the work performed excellent.

Much of the time of the clerks has been consumed in recording the missing military records recently received by this office from the War Department. This work requires a careful review of the records heretofore transcribed, and delays somewhat the final completion of the work ; but in the end it will give the State not only a complete record of each organization in the War of the Rebellion from Ohio, but also a full record of each individual soldier in those organizations, and it will enable this office to furnish information in answer to thousands of inquiries concerning military service, which could not heretofore be furnished on account of the incomplete condition of the records.

CORRESPONDENCE.

Twelve thousand one hundred and twelve official letters have been received during the year, of which number about eight thousand were from old soldiers or their representatives. All of these have been care-

fully and promptly answered by letters or certificates, or both. In addition to this there has been a large personal demand made on the office for certificates of military service and other information, by visiting soldiers or their friends, several thousand of whom have called at the office during the year.

ACKNOWLEDGMENTS.

I cannot close this part of my report without extending my kindly acknowledgments to the officers and clerks connected with this office, for the faithful and intelligent service they have rendered at all times in the discharge of their respective duties. But one change was made in the office force during the year. Transcribing Clerk D. L. Flickinger resigned February 21st, to accept a position in the office of the Insurance Commissioner, and his place was filled by the appointment of Captain J. B. Allen.

All that was stated in my report of 1886, under the head of "Acknowledgments," concerning the individual members of the office force, I desire to reassert in this report and, if possible, emphasize with the statement that I am grateful to all for the uniform fidelity and zeal with which they have served the office and the State.

APPROPRIATIONS AND EXPENDITURES, ADJUTANT-GENERAL'S DEPARTMENT.

For what purpose.	Balance Nov. 15, 1886.	Appropriation.	Expenditures.	Balance Nov. 15, 1887.
<i>Office.</i>				
Salary of Adjutant-General	\$500 00	\$2,000 00	\$2,000 00	\$500 00
Salary of Assistant Adjutant-General	375 00	1,500 00	1,500 00	375 00
Salary of Chief Clerk	350 00	1,400 00	1,400 00	350 00
Salary of Assistant Clerk	150 00	600 00	600 00	150 00
Salary of four transcribing Clerks	1,143 34	4,856 60	4,569 94	1,430 00
Salary of Superintendent State Arsenal	300 00	1,200 00	1,200 00	300 00
Contingent Expenses and Inspection	350 41	1,500 00	1,246 14	604 27
<i>Ohio National Guard.</i>				
Expenses Court Martial	467 43	500 00	612 95	354 48
Pay Ohio National Guard in Camp	161 90	48,176 00	43,843 00	4,494 90
Transportation Ohio National Guard	2,074 84	14,655 49	9,293 63	7,436 70
Subsistence Ohio National Guard .....	.....	14,912 49	14,420 09	492 40
Incidental expenses Military Companies	10,884 04	11,000 00	10,884 04	11,000 00
Horse hire for Batteries .....	.....	4,740 75	3,189 75	1,551 00
Uniforms Ohio National Guard	11 44	12,620 00	12,631 44	.....
Overcoats and blankets	101 30	5,000 00	2,295 00	2,806 30
Rent of Encampment Grounds, etc	101 62	.....	84 00	17 62
Care of Military Stores and freight on Arms	134 62	942 34	972 00	104 96
Expenses O. N. G. at Cincinnati	360 02	10,630 44	10,456 92	173 52
Forage for horses .....	.....	500 00	79 50	420 50
For revising Code of O. N. G. .....	.....	300 00	209 20	90 80
<i>Miscellaneous.</i>				
Repairs State Arsenal	139 37	50 00	167 63	21 74
Transportation Indigent Soldiers	70 70	100 00	73 20	97 50
For making copy Roster Ohio Troops	1,718 92	13,890 70	12,171 72	3,403 39
For publishing Roster Ohio Troops	14,930 00	30,000 00	22,830 00	22,100 00
For Gettysburg Soldiers' Monuments	36,965 25	.....	25,627 24	11,338 01
Expenses shipping Roster Ohio Troops .....	.....	1,190 00	453 56	736 44
Paving and repairing streets .....	.....	7,482 60	7,482 60	.....
John Conroy, loss of horse .....	.....	150 00	150 00	.....

STATEMENT

OF FUNDS RECEIVED FROM VARIOUS SOURCES AND COVERED INTO THE STATE TREASURY
BY THE ADJUTANT-GENERAL.

Date.	From what source.	Amount received.	Amount covered into the State Treasury.
1887.			
Feb. 15	Sale of Rosters Ohio Troops	\$68 00	
15	By Treasurer's receipt		\$68 00
Mar. 26	Rebate on freight	6 33	
26	By Treasurer's receipt		6 33
Apr. 5	Rent of stone quarry to April 21, 1888	50 00	
5	By Treasurer's receipt		50 00
23	Ohio Valley Publishing & Manufacturing Co., drayage on Roster Ohio Troops.....	20 75	
23	By Treasurer's receipt		20 75
May 16	Sale of Rosters Ohio Troops.....	57 00	
16	By Treasurer's receipt		57 00
Aug. 13	Field and staff, 9th Battalion, overdrawn per diem...	6 00	
13	By Treasurer's receipt		6 00
24	Sale of Rosters Ohio Troops.....	23 00	
24	By Treasurer's receipt		23 00
Nov. 15	Sale of Rosters Ohio Troops.....	113 00	
15	By Treasurer's receipt		113 00
	Total	\$344 08	\$344 08

SALE OF OLD AND CONDEMNED ORDNANCE STORES.

Sold under the Provision of House Joint Resolution No. 72, adopted March 20, 1885.

Date.	To whom sold.	Am't.
1887.		
May 7	To balance on hand November 15, 1886	\$121 25
7	Sold G. D. Ullery, New Albany, O., 8 Belgian muskets, @ \$1.50...	12 00
7	Sold J. C. Cline, Pottersburg, O., 4 Belgian muskets.....	6 00
9	Sold Pierson & Niles, Troy, O., 6 Belgian muskets.....	\$6 00
	3 swords	3 00
		9 00
July 13	Sold H. D. Burch, Hebron, O., 1,000 blank cartridges.....	17 00
13	Sold Major S. A. Collins, Columbus, O., 6 Belgian muskets, etc....	22 50
20	Sold J. S. Harris, Xenia, O., 1 B. L. Springfield rifle.....	13 00
21	Sold Jacob Threaves, Columbus, O., 1 Belgian musket	1 00
27	Sold J. H. Bluham, Columbus, O., 1 Belgian musket	1 00
Sept. 10	Sold Ray Barcus, Columbus, O., 1 Belgian musket.....	1 00
15	Sold —————, 1 Belgian musket	1 00
		\$204 75

SALE OF OLD AND CONDEMNED ORDNANCE STORES—Concluded.

Date.	To whom sold.		Am't.
<i>Expended.</i>			
1887.			
Aug. 3	Mrs. F. Dunkler repairing overcoats	\$35 10	
Sept. 3	Ray & Dowdel, marking knapsacks	27 75	
6	Winchester Repeating Arm Co., gatling cartridges.....	17 00	
		<hr/>	\$79 85
	Balance on hand November 15, 1887		<hr/> \$124 90

ENCAMPMENTS.

In order that the greatest opportunities might be afforded for special instruction in the detail work of the soldier in camp, it was considered best to encamp the Guard this year by regiments.

The encampments were held at the times and places following, viz.:

Organizations.	Where.	Date, inclusive.
First Regiment Light Artillery.....	Delaware.....	August 10-15.
First Regiment Infantry.....	Washington C. H... ..	July 4-9.
Second "	Findlay	August 10-15.
Third "	Union City.....	" 17-22.
Fifth "	Coit's	" 4-9.
Sixth "	Delaware.....	" 3-8.
Eighth "	Galion	" 23-28.
Ninth Battalion Infantry	Wilmington	July 28 to Aug. 2.
Thirteenth Regiment Infantry.....	Dayton	July 7-12.
Fourteenth "	Lancaster	September 6-11.
Sixteenth "	Port Clinton.....	August 17-22.
Seventeenth "	New Lexington	" 23-28.
Toledo Cadets, unattached.....	Washington, D. C... ..	May 21-26.
First Cleveland Troop, Cavalry.....	Chicago, Ill.....	October 1-9.

The foregoing statement includes all the organizations in the National Guard service. Some of these remained in camp longer than the time fixed by law, but no payment or allowance was made by the State for the extra time, nor for transportation outside of the State.

All the different encampments were visited, and the commands reviewed, inspected and mustered by the Adjutant-General or Assistant Adjutant-General. At least one of the officers detailed from the United States Army, by the War Department, was present throughout each encampment. These officers, in addition to their duties as representatives of the army, were requested to criticise and correct all violations of tactics, regulations or customs of the service, which might come under their observation. This work was thoroughly performed, and the

marked improvement in the officers and men in all the details that go to make up the true and characteristic soldier, will bear witness of this fact. The National Guardsman of to-day is quite a different individual from that of eight or ten years ago. During that period, the annual maneuver has changed from the picnic, gala-day parade to the realities of the true military encampment; the guardsman from the ridiculed mock soldier, to the typical volunteer of the Republic, recognized throughout the Union as the guardian of the Nation's peace and honor. The procession of improvement has been rapidly moving onward. Adjutant-General Drum of the United States Army, in his annual report for the year 1887, thus speaks of the service:

"The steadily increasing interest manifested by the militia of the States is evidenced by the high percentage of attendance at the annual encampments and the generally excellent military spirit of the troops. With the liberal increase of the appropriation made by Congress at its last session for the benefit of the militia, it is earnestly hoped that the State military authorities will, by an increased allowance of ammunition, foster and develop the efficiency of the rank and file in target firing.

"The care of his weapon is an important duty of a soldier, and therefore, while many company organizations include an armorer, his duties should not be those of an absolute care-taker, but rather as an instructor of the men of the company, except in rare cases, where his services as an expert are a necessity. Much benefit would undoubtedly follow from the establishment, during each encampment, of an officers' school for instruction in battalion drill and the administration of a post. As the correct handling and management of a company depends measurably on the intelligence and knowledge of its non-commissioned officers, I would also suggest the advantage of holding weekly, during the winter months, a non-commissioned officers' school (the captain as instructor), for instruction in company drill, duties of guards and sentinels and the administration of a company. Young officers of the army could be spared during the winter to report to Adjutant-Generals of States, on application of the Governors, to aid in the instruction of both officers and non-commissioned officers.

"While it is evident that still many earnest workers, in bringing up the militia to its highest efficiency, seem to regard mechanical perfection in drill as the great desideratum in the art of war, evidences are not lacking to show the development of the truer perception; that knowledge of military duties, the cultivation of individual powers, endurance, intelligent but cheerful obedience, are, in truth, the real characteristics of the citizen soldier of the Republic."

I desire to express my acknowledgments to Captain J. T. Haskell, 23d Infantry, Lieutenant A. C. Sharpe, 22d Infantry, Lieutenant E. L. Benton, 3d Artillery, and Lieutenant W. S. Scott, 1st Cavalry, U. S. Army, for the valuable and efficient service rendered during the encampments. By their cheerful, able and willing assistance they have won the lasting gratitude of all the officers and men in the Ohio National Guard. Special attention is called to the reports of these officers herewith submitted.

I am under obligations to all the officers and men of the different commands for the uniform courtesies extended to me on all occasions during the year. They are all honorable soldiers and true gentlemen.

For a full and detailed report of the encampments, your attention is called to the reports of the different commanding and staff officers, also herewith submitted.

HEADQUARTERS FIRST REGIMENT OF INFANTRY, O. N. G.,
CINCINNATI, O., *July 21, 1887.*

General H. A. Axline, Columbus, O.:

SIR: I have the honor to report that in compliance with General Orders No. 11, from General Headquarters, Columbus, Ohio, dated June 25, 1887, this command on the morning of July 4, left the regimental armory in the city of Cincinnati, taking trains of the Columbus and Cincinnati Midland R. R. Co., whereby in due time the grounds at Washington C. H., previously selected as camp ground for the annual tour of encampment for 1887, were reached.

Prior to that day a detail had been forwarded for the purpose of preparing the grounds and getting the camp and garrison equipage in place, and the preparation of food for the men upon their arrival.

I do not endorse the plan of sending the military equipment in advance, for I believe it best to leave the handling of it to the men, especially if they are raw in exercises of that kind.

In active service the men, as a matter of course, arrange their own camp, and the O. N. G. should be no less experienced.

In loading and unloading, railway or baggage trains, and going into and breaking camp there is much in the way of detail to be learned before the duty can be performed with care, dispatch and in an orderly manner.

The six days limitation is so short that some such plan as I adopted is necessary to give time for instruction in field duties.

Immediately upon arrival in camp the routine of duty, prescribed by General Orders from General Headquarters of the State, regulating encampments of the State for the year 1887, was entered upon and adhered to until the last hour of the encampment, except in a few instances where the extreme heat of the day rendered the exercise of discretion, necessary upon the part of the commanding officer, in relieving the command from battalion drill.

For the first day or two the health of the men became a matter of attention, but not to such an extent as to be alarming. The very warm days, the damp nights, and the unendurable drinking water, soon brought disorder to quite a number. How-

ever, at the end of the eight days spent in camp, two days beyond the allotted time, and upon the six days' rations issued by the State, and plentiful at that, all went to their homes feeling well in body, with a better spirit and higher knowledge of the duties of a soldier than ever before.

It was gratifying to witness the interest in military duty and great desire to become accomplished officers which sprang up after a few hours contact with Lieut. Sharpe, of the U. S. A., who came to us under his detail by the War Department of the U. S., and upon the request of the Governor of this State, as an inspector and instructor. Lieutenant Sharpe in a most admirable manner addressed himself to the details of the service in all its branches so far as they related to the infantry arm of the service and the occasion.

The minute details of military duty are naturally not wantonly but carelessly regarded by the O. N. G., and to many after a while the life becomes unattractive and a disappointment; but when the whole system is once seen, it stands out as a well-defined, reasonable, wise, orderly regulation. From reveille to taps, every signal, roll-call, parade and report has its utility and purpose in showing to the commanding officer where his officers and men are, and that he may exercise them in preparation for the sterner duties of the soldier; and in that respect Lieutenant Sharpe's presence and labor were not in vain.

The presence in camp for several days of Adjutant-General Axline and Assistant Adjutant-General Wickham, with that soldierly deportment and unflagging interest in the Ohio National Guard, which have rendered their administration such a successful one, gave encouragement to every officer and enlisted man.

Military duty was made more pleasant by the visits and sojourn of a day or two of Major Stewart (retired), Captains O'Connell and Callanan, with Lieutenant Benton, all of the U. S. A., as guests of the commanding officer.

I have the honor to be, your very obedient servant,

F. W. MOORE,
Col. Comd'g 1st Regiment Infantry, O. N. G.

HEADQUARTERS OF THE FIRST REGIMENT, O. N. G.,
CINCINNATI, August 15, 1887.

Col. F. W. Moore, Commanding 1st Regiment Infantry, O. N. G.,

SIR: I have the honor to submit the following report of the Medical Department of the First Regiment, O. N. G., while in Camp at Washington Court-House, from July 4, to July 12, 1887:

The men of the Regiment arrived in Camp on the evening of the 4th, in splendid condition and health, and continued so until the third day, or the 7th of July, when a large number were reported sick from bowel affections.

On investigation of the cause, it was found attributable to the water used for drinking purposes. As a rule the men had been accustomed to the use of soft or Ohio river-water. In the Brigade encampment of the previous year, 1886, on the same grounds, well-water was not used, but hauled from a creek near by; and we had comparatively little trouble with bowel affections, but since then wells had been dug on the grounds, from which water for drinking and culinary purposes was obtained, strongly impregnated with lime and other mineral substances, and the weather being excessively hot, it was freely used, indeed to excess. This, as is almost invariably the case, produced diarrhoea or dysentery, so that by the fifth day of the encampment, fully three-fourths of the men were affected, and required prompt and efficient treatment, which however promptly yielded to proper remedies.

Six cases of dysentery were now serious. The encampment was exceptionally clear of malarial fever, there being only two cases seriously so affected.

Ten men were overcome with heat, but none of them proved fatal, although some of them were very serious.

Were it possible it would be better for the health and safety of the troops to encamp either early in June or late in August, before or after the excessive heat of summer had commenced or passed. As in my last three reports of '84, '85 and '86, permit me to urge the propriety of selecting camping grounds on some running stream of water large enough for the men to bathe daily, and where the water for drinking and culinary purposes is of a better kind, and especially clear of minerals, or so strongly impregnated with lime or soda.

There was but little trouble with sinks, those being used made by the Directors of the Fair-grounds.

The Sanitary condition of the camp was excellent; the men were required to air their bedding every morning, and to raise the walls of the tents, bedding was taken out of the tents promptly where bed sacks were used; some of the beds were made by laying piles of straw on the ground in the tents and spreading sheets over them, instead of having bed sacks. This should be forbidden; this is a custom that would be more honored in the breach than in the observance, as the straw not being moved during the encampment, becomes a hot-bed for the propagation of the germs of disease, and ought to be put a stop to by an order from the commanding officer. It would be much more healthful to spread their blankets upon the ground, and sleep on them, than to sleep on these hot-beds of disease.

In conclusion permit me to again call your attention to the absolute necessity for the safety and comfort of the sick, of providing a hospital tent with necessary cots and bedding, where they may be removed from the noise and confusion of camp life. During this encampment I was compelled to remove some of them to my own quarters, and cared for one of the officers there for several days.

The necessity of such provision was dwelt upon at length in my last three reports, as well as several other matters in connection with encampments, to which you are respectfully referred.

I would respectfully suggest that it would be better for the health of the troops were the encampment held early in June before the excessive hot weather of summer begins, or late in August after it has passed.

Very respectfully,

A. E. JONES,
Surgeon 1st Regiment, O. N. G.

HEADQUARTERS SECOND REGIMENT, O. N. G.,
KENTON, O., August 22, 1887.

Major General H. A. Axline, Adjutant-General, State of Ohio, Columbus, Ohio:

SIR: Pursuant to General Orders No. 11, dated June 25, 1887, General Headquarters, State of Ohio, designating Findlay, Ohio, as the place of encampment for the Second Regiment of Infantry, Ohio National Guard, from the 10th to 15th of August, 1887, inclusive, by orders from these headquarters, companies C, D, I and K, via L., E. and W., and B, G and E, via I., B and W., and H overland, arrived in the city of Findlay on the 10th, about the hour of 10:30 A. M., and with Company A, located at Findlay, went immediately into camp at the Fair Grounds.

Two men, together with Quartermaster and Quartermaster-Sergeant, had been

sent ahead the day before, and tents were all up, and the men, after receiving instructions through their officers, as provided by code, were conducted to their respective company quarters, and by 10 o'clock P. M. the camp was well perfected.

Details were made, and a guard line established within a few minutes after our arrival.

A dress parade was held in the evening, and a short battalion drill indulged in after the parade was dismissed.

From the time we arrived in camp until our break, the routine of duty, as prescribed, was carried out, except as to hours, some changes necessarily being made.

In my ten years' experience in the National Guard I have never seen better discipline and more general good feeling among officers and men than was displayed at this encampment.

Our grounds were exceedingly well situated, and with the advantage of an abundance of natural gas, which was used for cooking purposes and lighting of the camp, made this all that a well regulated camp ground could be.

Very few punishments were inflicted, as but two or three breaches of discipline were reported to these headquarters.

Lieut. A. C. Sharpe, of the U. S. A., our inspecting officer, was of great service to the command, and his instructions as to customs of service will be of great benefit to the officers and men of the regiment, and all join in giving him their hearty thanks for services rendered. To Colonel Wickham, our mustering officer, the regiment returns thanks for his kindness and instructions.

Each department of the Regimental Staff, Adjutant, Surgeon and Quartermaster, deserve the thanks of the Colonel commanding for their very efficient services rendered, much work being performed by them that heretofore devolved upon the Colonel.

In conclusion, I wish to say, that officers and men of the Second Regiment feel highly pleased with the encampment, and by hard work and strict obedience to orders, will make such a showing in another year that will be felt and known throughout the State.

Respectfully submitted. Your obedient servant,

JAMES C. HOWE,
Colonel Commanding 2d Regiment Infantry, O. N. G.

OTTAWA, O., August 22, 1887.

Col. James C. Howe, Commanding 2d Regiment Infantry, O. N. G., Kenton, O :

SIR: I have the honor to make the following report of the sanitary condition and surroundings of the 2d Regiment of Infantry, O. N. G., during its encampment at Camp Stoker, near Findlay, O., from August 10th to 15th, inclusive.

The camp was located in a beautiful sugar grove, gently sloping to the north, thus affording abundant shade and excellent drainage.

The health of the regiment was all that could be desired, the reports showing only nineteen excused from duty on account of sickness; an average of less than four per day, or seventy-nine hundredths per cent. per day of the regiment.

It was thought best to send one man home from Company K, who had been brought to the camp with the beginning of an attack of typho-malarial fever already upon him, as the regiment had no suitable hospital tent or proper conveniences for taking care of the sick.

The thorough provision for the removal of kitchen refuse, the ample supply of cool water for men, and the convenient supply of gas for cooking, together with the

thorough daily policing of the grounds, in connection with the generous provision of board floorings for the tents, made Camp Stoker almost perfect, in a sanitary point of view.

In closing this report I desire to acknowledge with thanks the prompt consideration which the Colonel commanding the regiment paid to such suggestions and requisitions as were made to preserve the health of the men.

Very respectfully,

A. L. PAUL,
Surgeon 2d Regiment Infantry, O. N. G.

VAN WERT, O., November 15, 1887.

Col. James C. Howe, Commanding 2d Regiment Infantry, O. N. G., Kenton, O.:

SIR: I have the honor to make the following report as Quartermaster of the 2d Regiment Infantry, Ohio National Guard, during the encampment at Findlay, O., from the 10th to the 15th of August, inclusive:

RECEIPTS.

Subsistence	\$986 40
Transportation	63 08
Horse hire for officers	54 00
Forage for horses	9 00
Fremont Lowery (due from headquarters).....	35 76
	<hr/>
	\$1,148 24

EXPENDITURES.

Fetters & Hardman.....	\$120 00
Schwarz & Winders.....	67 10
Michel & Vail.....	119 07
Curtis & Drake	107 90
E. J. Totten	85 58
Geyer & Davis.....	141 19
Captain Chas. Davis	9 19
" W. S. Metts.....	9 31
" F. M. Bell.....	14 50
" John Rison	13 44
" W. E. Scott.....	117 60
" E. S. Bryant.....	163 20
" H. E. McClure.....	64 08
Horses.....	54 00
H. H. Free, hay and oats.....	15 34
Medical supplies	36 85
D. M. Stroub (transportation)	42 00
A. B. Probert (transportation)	2 00
Fremont Lowry (transportation).....	1 00
Captain W. S. Metts, Company B.....	2 00
" F. M. Bell, " C.....	2 75
" John Rison, " D.....	1 00
" Simon Price, " E.....	2 50
" W. E. Scott, " G.....	4 00

Captain E. S. Bryant, Company H	\$50 04
“ Hugh E. McClure, Company I	10 50
“ B. M. Clen Dening, Company K.....	9 75
	<u>\$1,269 89</u>

RECAPITULATION.

Receipts	\$1,148 24	
Expenditures		\$1,269 89
Overpaid.....	121 65	
	<u>\$1,269 89</u>	<u>\$1,269 89</u>

Very respectfully,
Your obedient servant,
FREMONT LOWRY,
1st Lieutenant and Quartermaster 2d Regiment Infantry, O. N. G.

HEADQUARTERS THIRD REGIMENT INFANTRY, O. N. G.,
COVINGTON, OHIO, *September 1, 1887.*

General H. A. Axline, Adjutant-General, Columbus, Ohio :

SIR: In accordance with paragraph 7, of General Orders No. 10, I have the honor to submit the following report:

I assembled my command August 17, and went into camp at Union City, Indiana.

The camp was situated in a beautiful grove north of the town. There was just shade enough to make it pleasant. The first day was rainy. We arrived in camp during a heavy rain.

Lieutenant-Col. Shellenberger, with a camping party, had preceded us, and had most of the tents up, so that the men all found shelter upon our arrival. The rain continued during the day and night, consequently no straw could be issued, but as the tents were all floored the command fared pretty well.

During the forenoon of the second day the rain ceased and the sun shone, and in the afternoon we had our first battalion drill. On the third day we had two very interesting battalion drills, part of which was skirmish.

The fourth day was devoted to inspection and muster. The inspection was conducted by Lieutenant A. C. Sharpe, of the 22d Infantry, U. S. A., and was very thorough and complete—not a defect in uniforms, arms, accouterments, condition of tents, cooking, etc., but was noticed and pointed out.

The muster for pay was done by your Assistant, Colonel Wickham.

The fifth day was the Sabbath. Chaplain Ketchum conducted Sabbath-school at 10 o'clock A. M., and divine services at 2:30 o'clock P. M.; he was assisted in the latter by the Rev. Fowler, of Winchester, Indiana.

Monday being the 6th day, we very reluctantly broke camp and went home. The day being rainy, I left a squad of company A, under command of Quartermaster Shuman, to care for the tents.

About 10 o'clock A. M., the command, except Co. C, marched to the depot. Companies E, H and the band left at 10:40 o'clock A. M., on the Bee Line; companies A, B, E, F and G started at 11:40 o'clock A. M. on the Pan Handle; Co. E went at 2:30 o'clock P. M. on the D. & M. The tents were not dry enough to fold until Wednesday, the 24th. So far as I know every man of the command arrived home safely. Taken altogether I consider this encampment a grand success, the

only draw-back being the water, which did not agree with the men, causing dysentery. (See Surgeon's report).

Your General Orders, No. 9, prescribing the drills to be observed, were carried out as far as possible; owing to rain we had not the time to go over the entire list.

On Saturday and Sunday we had a great many visitors, large delegations coming from the homes of the several companies.

Commissioned officers' school, presided over by Lieutenant A. C. Sharpe, and non-commissioned officers' school, presided over by Lieutenant-Colonel Shellenberger, were well attended and a deep interest taken in them. Too much praise can not be given Lieutenant A. C. Sharpe for his efficient work. I can safely say that every man in my command was benefited by his presence. The discipline of the command during the entire encampment was never better, and I desire to thank the officers and men for their good behavior, and the respect shown me as their commander.

Permit me, before closing, to suggest that there are among, perhaps others, two points of weakness in the National Guard which, no doubt, have occurred to you, that the services of good officers, especially company officers, are often too lightly prized, and the companies are too frequently changing officers. Good officers should be retained as long as possible; and second, that the annual encampments are of too brief duration. If my command could have two weeks each year in camp they would be competent to meet any equal numbers in "martial array."

Respectfully submitted.

WILLIAM M. WILLIAMSON,
Colonel Commanding 3d Regt. Infantry, O. N. G.

MEDICAL DEPARTMENT, THIRD REGIMENT INFANTRY, O. N. G.,
TROY, O., September 1, 1887.

*Col. Wm. M. Williamson, Commanding 3d Regiment
Infantry, O. N. G., Covington, Ohio:*

SIR: I have the honor to submit the following report of the sanitary condition and health of the 3d Regiment Infantry, O. N. G., while in Camp Sheridan, near Union City, from August 17-22, 1887:

The men arrived in camp during a drenching rain, which caused many of them severe colds. This would have been much aggravated had not the tents been up ready for occupancy.

Upon our arrival at our quarters, I immediately visited the hospital tent, so kindly furnished by the companies of the regiment, which I found mildewed and unfit for use, and in the center of the ground covered, was a small floor, but not one of the ten or twelve bunks and blankets belonging to the department was there.

This matter I desire to call your attention to; men should be well protected in case of sickness, and should be surrounded with all the comforts that can be obtained. This can not be accomplished when bunks and blankets belonging to the hospital are appropriated by others. I desire to urge the necessity of more careful provisions for the men in case of sickness. A bunk or blanket should never be removed from the hospital without the consent of the surgeon in charge.

In passing over the ground I found it well located as to drainage, etc. There were a few points in this location that should have received attention before locating. In this connection permit me to say that no camp should be decided upon until a medical officer has inspected it and decided upon its healthfulness.

In this camp we had water containing sulphur and iron, which caused diarrhoea.

This could and should have been avoided. It at least caused fifty per cent. of the sickness in camp.

While we had but few cases of severe sickness, the cases of diarrhœa, stomach trouble and intermittent fever, treated by my department, was largely in excess of any previous year.

A few accidents occurred to visitors that resulted in severe wounds, but none to members of your command.

I desire here to call your attention to the fact that surgeons in O. N. G. are not provided by the State with instruments to perform the most minor operation in surgery, should circumstances require it. This neglect of the medical department should receive attention.

The health and lives of enlisted men should be well looked after, as by that means only can the efficiency of armies be retained. Sick, diseased and poorly cared for men can not be expected to perform good service.

The result of vicious habits should be taught the men, and to do this, one hour each day should be set apart for the men to receive instructions from the medical officer in charge or his assistant.

A medical department of the State should be established that should be presided over by the Surgeon-General. The State should pay his expenses and time in visiting each regiment during its encampment, that he may see that the surgeons are qualified and competent to perform their duty.

It is with gratification that I note the improved sanitary precautions that are now taken over those of ten years ago, when I first entered the service. Cleanliness is more universally observed, the cooking is more carefully performed, and the men have greater care for their quarters.

The rations furnished by the Quartermaster were exceptionally good.

Very respectfully,

JOHN A. STERRETT,
Surgeon 3d Reg't Infantry, O. N. G.

COVINGTON, OHIO, *November 15, 1887.*

Col. Wm. M. Williamson, Com'dg 3d Reg't Inf't'y, O. N. G., Covington, O.:

SIR: I have the honor to submit the following report as Quartermaster of the 3d Regiment of Infantry, Ohio National Guard, during the encampment at Union City, Indiana, from the 17th to the 22th of August, inclusive:

RECEIPTS.

For subsistence.....	\$969 60
For transportation	75 70
For horse hire for mounted officers.....	72 00
For forage for horses.....	12 00
For sutler's privilege	118 24
From headquarters	12 40
	<hr/>
	\$1,259 94

EXPENDITURES.

Henry Fox.....	\$415 56
R. J. Clark	87 33
Henry Grahs.....	63 50

Turpen and Harris.....	\$260 58
Paid com. companies	155 03
Lumber.....	116 51
Wood	12 50
Straw	25 00
Cleaning ground and well.....	17 30
Expenses headquarters	64 69
Ice	13 37
Rent of furniture	8 85
Drying and rolling tents	26 00
Transportation of baggage.. ..	75 70
Horse hire for officers.....	72 00
Forage for horses.....	26 00
Medical supplies.....	28 10
	<hr/>
	\$1,468 02

RECAPITULATION.

Receipts	\$1,259 94	
Expenditures		\$1,468 02
Overpaid.....	208 08	
	<hr/>	<hr/>
	\$1,468 02	\$1,468 02

Very respectfully,
Your obedient servant,

C. C. SHUMAN,
First Lieut. and Quartermaster 3d Reg't Inf'ty, O. N. G.

HEADQUARTERS FIFTH INFANTRY O. N. G.,
CLEVELAND, OHIO, *September 22, 1887.*

Adjutant-General, Columbus, Ohio:

SIR: In compliance with General Orders No. 10, C. S., A. G. O., I have the honor to make the following report of the annual encampment of my command, held from August 4th to August 9th, 1887, both days inclusive.

On receipt of General Orders No. 11, C. S., A. G. O., ordering the regiment to go into camp on above dates, I issued the following orders:

HEADQUARTERS FIFTH INFANTRY O. N. G.,
CLEVELAND, O., *July 22, 1887.*

ORDERS, No. 20.

I. In compliance with General Orders No. 11, from Headquarters of the State, Adjutant-General's office, dated June 25, 1887, the regiment will go into its annual encampment at Coits, Ohio, on August 4, 1887, and remain six days, breaking camp on August 9, 1887.

II. The field and staff, non-commissioned staff, band and drum corps, and companies A, B and F, will report at the O. N. G. armory, in Cleveland, O., at or before 9 o'clock A. M., August 4, 1887.

III. Company "C" will leave Burton, O., via Pittsburgh and Western Railway (special), leaving about 5.30 A. M., August 4, 1887, arriving at Painesville at 6.55 arriving at Coits about 8 o'clock.

IV. Company "D" will leave Berea, O., via Lake Shore R'y, at 9.59 A. M., and on arriving in Cleveland, will report at the O. N. G. armory.

V. Company "E" will leave Geneva, O., August 4, 1887, at 6.23 A. M., via Lake Shore R'y, taking up Company "C" at Painesville, O., and both companies will reach Coits, O., about 8 A. M.

VI. Company "G" will leave Norwalk, Ohio, August 4, 1887, at 8.27 A. M., via Lake Shore R'y, and, on arriving at Cleveland, will report at the O. N. G. armory.

VII. Company "H" will leave Youngstown, Ohio, August 4, 1887, at 8.30 A. M., via N. Y. P. & O. R'y, and, on arriving at Cleveland, O., will report at the O. N. G. armory.

VIII. The field and staff, non-commissioned staff, band and drum corps, and companies A, B, D, F, G and H, will leave Cleveland, O., August 4, 1887, at or about 11.00 A. M., via Lake Shore R'y, and proceed to Coits, Ohio.

IX. The commanding officers of companies will consult their local railway agents as to details for loading, etc., and provide a suitable force of men for the handling and transferring of company baggage.

X. The commanding officer of each company will detail two men to report to Quartermaster C. H. Flick, at Coits, Ohio, on August 2, 1887, A. M., for pitching tents.

XI. Each and every enlisted man of the regiments will carry his clothing and underwear in his knapsack; no trunks, valises or boxes will be allowed to be brought into camp. Canteens and haversacks will be left in company armories. Blankets and bed clothing of each company will be packed in large boxes for transportation, overcoats will be strapped and carried on top of knapsacks.

XII. Commandants of companies will be held strictly accountable for the presence of the full strength of their respective companies during the encampment. No member of the regiment will absent himself from the encampment without first having obtained a written excuse approved by the Colonel commanding. All members absent without leave will be dealt with according to sections 3067 and 3068 of the amended militia laws of the State.

XIII. Commandants of companies are hereby charged with the promulgation of these orders, and will see that every man of their respective commands is served with a copy.

By order of

F. H. FLICK,

HERMAN MAYER, *Adjutant.*

Colonel Commanding.

The above orders were complied with, and the average daily attendance was 420 officers and men out of 491, which was the aggregate strength of my command.

The grounds selected for the encampments are located six miles east of Cleveland, at Coits Grove, on which the regiment camped on four previous occasions.

The camp was named in honor of one of Cleveland's most distinguished citizens, a thorough soldier, and a warm friend of the Ohio National Guard—Colonel George A. Garretson—"Camp Garretson."

The duties performed during the encampment were those prescribed by General Orders No. 8, 9 and 10, C. S., A. G. O., and a very marked improvement was noticeable in the discipline and drill of my command at the close of the encampment.

During the entire encampment my command was honored with the presence of Captain Joseph F. Haskell, 23d Infantry U. S. A., who was detailed by the War Department for the purpose of inspecting the troops of the O. N. G.

Captain Haskell gave my command very valuable instructions in all that pertained to the duties of troops when camping, as well as on drills and ceremonies.

The presence of experienced officers of the regular army is of immense benefit to State troops when in camp, and all further administrations can not serve the Ohio National Guard any better than to continue the custom of requesting that regular army officers be detailed for the purpose of inspecting and instructing our troops.

Previous to going into camp, I caused the camp to be laid out, tents pitched, mess houses erected and sinks dug in order that the command would lose no time after arriving in camp in commencing to perform military duties.

The regimental quarter-master contracted for subsistence, and each company

made requisition for supplies and cooked and prepared the same for their tables by hired cooks.

Each company has a complete outfit of kitchen equipments of its own.

The regiment was mustered on August 8th, by Major General H. A. Axline, Adjutant-General, and was inspected by Captain Joseph F. Haskell, 23d Infantry, U. S. A.

In conclusion, I must acknowledge with pleasure that I am greatly indebted to General Axline, Colonel Wickham, Captain Haskell, 23d Infantry, U. S. A., and Lieutenant Sharpe, 22d Infantry, U. S. A., for their uniform kindness towards my officers and men, and for their willingness to give them the benefit of their large experience in military matters.

It is the unanimous opinion of my officers and men that this encampment was the most successful one within the history of the regiment, considering the results obtained.

I am, sir, very respectfully, your obedient servant,

F. H. FLICK,

Colonel Fifth Regiment Infantry, O. N. G.

CLEVELAND, O., August 20, 1887.

Col. F. H. Flick, Commanding 5th Regiment Infantry, O. N. G., Cleveland, Ohio:

SIR: I have the honor to submit the following report of the encampment of the Fifth Regiment of Infantry, O. N. G., during its encampment at Coits, Ohio, from August 4 to 9, 1887, inclusive.

During the encampment about thirty men answered Surgeon's call daily, the prevailing disease being intestinal troubles.

About fifteen cases of prostration from heat, during the six days, nearly all of which occurred at drill. All except a very few were returned to duty within a day or two.

The general health of the command was excellent most of the time.

The location of Camp Garretson is one of the most healthful in Ohio, located on the shore of Lake Erie, the delightful breeze from the lake refreshing and lowering the temperature many degrees, and good shade, with dry and sandy soil.

The food for the men was good in quality, and I believe, plenty of it.

Good cooks only should be employed, as the food should be prepared in the best possible manner, as the health of the soldier depends much upon his food.

The tents and floors were in good condition, and beds of straw or cots are most healthful. The sinks were in fair condition; the garbage from messes could not be buried easily on the ground, and in the future I would suggest that it be conveyed to some point beyond the camp ground several times a day.

In regard to the care of the sick, it is necessary that each regiment be provided with at least one hospital tent, a half dozen cots, blankets, and the necessities for taking care of the sick; also liberal medical supplies and surgical instruments.

The State of Ohio has not contributed one cent for the payment of medical supplies during the last two years for the 5th Regiment, as laid down by the code. I am in possession of facts that teach me to believe that the medical bills of some of the other regiments have been paid by the State. Why the State will not pay them for the 5th Regiment, I can not understand, and why the State should order the Surgeon to go into camp with four or five hundred men, and become responsible for the proper care of the sick, and will not furnish medical supplies and other necessities for the comfort of the sick, is one of the unanswered. These men need five times the medial services that the regular troops do. The physical health of the

regular troops is far more superior to the Guard; the principal reason for this is, that recruits for the regular army must pass a rigid medical examination before being enlisted, while for the Guard no examination is required.

I believe it necessary that a thorough medical examination be made of all applicants for the Guard, and only sound men be accepted. With several million young men in the State of Ohio to select from, the State certainly can get splendid material to fill the regiments.

The effective force of an army depends upon the health of the troops, and not upon the number.

Very respectfully,

F. H. CLARK,
Surgeon 5th Regiment Infantry, O. N. G.

CLEVELAND, O., September 22, 1887.

Col. F. H. Flick, Commanding 5th Regiment Infantry, O. N. G., Cleveland, O.:

SIR: I have the honor to submit the following report as Quartermaster for the encampment of the regiment from August 4th to 9th, 1887, both days inclusive:

RECEIPTS.

From private subscription	\$400 00
“ field and staff (camp pay)	114 00
“ State for subsistence	1,039 00
“ State for horse hire, field and staff	54 00
“ companies, account subsistence	181 33
“ C. H. Flick, Quartermaster (money advanced)	19 01
	<hr/>
	\$1,807 34

EXPENDITURES.

For medical supplies.....	\$27 81
“ subsistence.....	1,301 09
“ lumber, hay, hauling, and other necessary camp expense.....	338 66
“ amounts due companies for subsistence.....	139 78
	<hr/>
	\$1,807 34

Due companies for subsistence:

Company C	\$26 91
“ G.....	101 22
“ H.....	11 65
	<hr/>
Total.....	\$139 78

Due from companies for subsistence overdrawn:

Company A.....	\$17 72
“ B.....	100 93
“ D.....	29 74
“ E.....	16 80
“ F.....	16 14
	<hr/>
Total	\$181 33

Cost prices for articles of subsistence :

Sugar—" Coffee A "	6½ cents per pound.
Coffee—" Mocha and Java ".....	35 "
Tea—Japan.....	60 "
Candles	15 "
Potatoes.....	\$1 30 per bushel.
Salt	8 cents per sack.
Rice.....	10 cents per pound.
Cheese	16 "
Milk	24 " gallon.
Beefsteaks.....	14 cents per pound.
Mess pork	10 "
Hams	16 "
Bacon	12 "
Bread (2-pound loaf)	8 "
Butter	30 "

Respectfully submitted.

CHAS. H. FLICK,
1st Lieutenant and Quartermaster 5th Regiment Infantry, O. N. G.

HEADQUARTERS 6TH REGIMENT INFANTRY, O. N. G.,

CHILLICOTHE, O., September 1, 1887.

To the Adjutant-General of Ohio :

SIR: In accordance with General Orders No. 11, General Headquarters of Ohio, I have the honor to report that I assembled the 6th Regiment of Infantry, O. N. G., and placed it in encampment at Delaware, Ohio, on August, 3, 1887, and continued in camp until August 8, 1887, both days inclusive.

The regiment went from Columbus to the camp on the same train and went into camp all at the same time.

This was a great advantage, and much more satisfactory to the men, as all had the same opportunity to procure straw, put up tents, secure rations promptly, and get them cooked.

The regiment arrived at camp about 1 o'clock P. M., and in two hours had tents pitched, and was ready for work. Dress parade was had that evening and each succeeding evening while the regiment remained in camp.

Two battalion drills were had each day, after the first, except Saturday, which was occupied by inspection, muster and review, and Sunday on which there were no exercises except dress parade, which was held after 6 o'clock in the evening.

The drills, guard duty and camp exercises generally, were under the supervising inspection of Lieut. A. C. Sharpe, of the 22d Infantry, U. S. A., who was in camp under orders from the War Department of the United States, as well as being appointed an aid upon the Governor's staff. His daily instructions to officers and men were of great value, and the result was that much more was accomplished than at any previous encampment of the National Guard with which I have been connected. The improvement was especially noticeable in the courtesy shown by the men for their officers, and by the manner in which guard duty was performed.

Lieut. Sharpe seems to have a faculty for imparting instruction, and also a gentlemanly manner that wins the respect and attention of the most careless soldier, and too high a value cannot be placed upon his services as an instructor of National Guard organizations.

As an impetus to further improvement in the 6th Regiment, I have offered a prize medal to the best drilled private or non-commissioned officer, and a prize banner to the best drilled company, to be awarded in both cases by the regular officer who may be present as inspector at the next encampment, and I hope as a result much improvement will be manifest at the next annual encampment of the regiment.

I hope that regimental encampments will be kept up instead of larger bodies, as to me they are of much more good to the organizations.

I submit, as a part of this report, the reports of Surgeon J. C. Bishop, to whom, and also Lieut. O. F. Thompson, Quartermaster of the regiment, I desire to especially offer my thanks for the efficient manner in which they performed their duties during the encampment.

Very respectfully,

JOHN C. ENTREKIN,
Colonel Commanding 6th Regiment Infantry, O. N. G.

MIDDLEPORT, O., August 10, 1887.

Col. J. C. Entrekin, Comd'g 6th Reg't, O. N. G., Chillicothe, O.:

SIR: I have the honor to submit the following report as Surgeon of the Sixth Regiment, O. N. G., while on duty at Camp Sherman, near Delaware, O., for the six days, commencing August 3d and ending August 8th, inclusive.

For the location of the camp you are entitled to great credit, as a more healthful one could hardly be found; being situated on the north bank of Greenwood Lake, in an oak grove, which afforded an abundance of shade, while the lake was freely used for bathing purposes.

There remained only one thing necessary to make it the finest camping ground I have ever seen, viz.: good drinking water close to the camp. This deficiency, however, after the first twelve hours, was entirely overcome by the diligent attentions of the gentlemen composing the Board of Trade of Delaware, by whose kindness we received an abundant supply of the best water.

It might be expected that, owing to the excessive heat and other causes, there would be an unusual amount of sickness, which, however, was not the case. Not a single serious case occurred in the six days.

The cases which did occur were generally due to changes of diet, water and intense heat, and with a few doses of medicine, attention to diet and rest, yielded readily. They were stomach and intestinal disorders exclusively.

Much of the sickness, which occurs during the first few days in camp, might be avoided if the men were taught at home that the mere fact of going to camp once a year does not carry with it a license to throw aside the restraints of common sense, and eat and drink excessively of every vile stuff that is peddled through the camp.

I believe this peddling among the men of provisions, drinks, etc., should be prohibited.

Your attention is called to the amount of medicines, now aggregating \$16.82, and with the use of *only one* pint of whisky for a regiment of nearly 500 men six days, it should be considered that this is a *reform* which the 6th Regiment desires to patent, but not for the regiment alone, as we earnestly recommend other organizations to try it also. I believe that heretofore too free a use of liquors in camp has been not only a fruitful source of sickness but an expensive luxury, which the State should prohibit.

I desire to thank the Board of Trade of Delaware for the patience and forbear-

ance they at all times manifested toward us in our demands, and recommend them to the favorable consideration of others who may come to them.

I am, very respectfully,

Your obedient servant,

J. BISHOP,

Surgeon 6th Reg't Inf't'y, O. N. G.

QUARTERMASTER'S DEPARTMENT,

6TH REGIMENT OF INFANTRY, O. N. G.,

CIRCLEVILLE, O., *November 15, 1887.*

Colonel John C. Entrekin, Comd'g 6th Reg't Inf't'y, O. N. G., Chillicothe, O.:

SIR: Herewith find statement of my account as Quartermaster of the Sixth Regiment during the encampment at Delaware, from the 3d to the 8th day of August, 1887, inclusive:

RECEIPTS.

Receipts from State..... \$1,027 20

EXPENSES.

Paid Leroy K. Galleher for subsistence	\$560 77
" J. L. Norton	144 24
" V. T. Hills	209 45
" Parks and Holtsmiller	65 50
" Thomas L. Yates and Son	26 65
" J. F. Miller	17 85
" R. R. fare for Geo. Millet and Mont. Long.....	3 60
" Freight and drayage.....	3 63
	<hr/>
	\$1,031 69

RECAPITULATION.

Amount received from State	\$1,027 20
" paid out.....	\$1,031 69
" due Quartermaster.....	4 49
	<hr/>
	\$1,031 69
	\$1,031 69

Statement of subsistence of headquarters, band and companies:

Headquarters overdrawn.....	\$54 28
Band	14 03
Company A.....	19 68
" D.....	10 04
" F.....	2 43
	<hr/>
Total.....	\$100 46

Amount due companies for subsistence:

Company B	\$3 98
“ C	18 93
“ E	15 20
“ G	11 31
“ I.	11 51
Total.....	<hr/> \$60 93

Respectfully submitted.

ORIN T. THOMPSON,
First Lieut. and Quartermaster, 6th Reg't Inf't'y, O. N. G.,

HEADQUARTERS EIGHTH REGIMENT INFANTRY, O. N. G.

AKRON, O., *November 1, 1887.*

To General H. A. Axline, Adjutant-General of Ohio, Columbus O.:

SIR: In compliance with General Orders No. 3, A. G. O., dated Columbus, Ohio, June 25, 1887, the Eighth Regiment O. N. G. went into camp at Galion, Ohio, from August 23d to August 28th, inclusive.

A detail of three men from each company was made, who preceded the regiment and had tents pitched, the kitchens built and dining-tables put up, in readiness for a model encampment.

The entire command arrived at camp by noon of the first day, and presented a creditable appearance upon dress parade in the evening.

The routine of camp duty, as laid down in General Orders No. 9, was followed as nearly as possible.

On the 24th of August the regiment was fully settled in camp, and everything in order for the business of the week.

Skirmish, company and battalion drill were held each day, and proved gratifying to all.

Captain J. F. Haskell, of the 23d Infantry, U. S. A., was present during nearly the entire encampment, and took charge of the officers' school, and attended the school of non-commissioned officers and also the drills. I presume his report will give to the Commander-in-Chief a disinterested view of our work while in camp.

It was the feeling of the officers and men of the 8th Regiment, that the encampment was more successful than any previous encampment of the regiment, and they returned to their homes with a feeling, that with the instructions received while in camp, they would be able to continue the work in their armories with a determination that the 8th Regiment, in the matter of drills, discipline and moral, should not be exceeded by any other regiment in the State.

The behavior of the officers and men while in camp was admirable, and our cordial reception by the citizens of Galion, where our encampment was located, was most gratifying, and the members of the 8th Regiment will always cherish the pleasant recollection of our encampment of '87.

Very respectfully yours,

A. L. CONGER,
Colonel 8th Regiment, O. N. G.

AKRON, O., *November 1, 1887.*

Col. A. L. Conger, Commanding 8th Regiment Infantry, O. N. G., Akron, Ohio:

SIR: As surgeon of the 8th Regiment, I have the honor to submit the following report for the encampment of 1887.

The regiment went into camp on the 23d of August, at Camp Ross, Galion, Ohio, with a total number of 370 men.

This camp was most pleasantly situated on rolling ground in an open field, bordering on a timbered tract, that afforded a good resting place when off from duty.

The water supply was abundant and pure, brought direct from the city water-works in pipes laid especially for the encampment.

For drinking purposes there was arranged a huge hogshead with a coil of pipe inside running the full height, leaving a long circular space in the center, which was daily filled with ice and covered. A faucet at the top of the hogshead allowed the water to be drawn as needed. This plan afforded good, cool water for drinking, without being ice cold. Ice water should never be permitted in camp, as it is productive of many of our camp disorders.

The food furnished was all that could be desired, and no complaints were heard. The cooks had good quarters and accommodations for preparing meals, which were well served, as I can attest from actual engagement.

Each company was provided with a barrel for the reception of refuse, which was hauled away morning and evening. Where this can be done, it is far more satisfactory than sink holes.

The entire grounds were thoroughly policed daily and the rubbish taken away and burned, and in consequence of this, and the pride the men took in keeping their respective quarters in proper condition, we had one of the neatest camps it has been my fortune to see.

The health of the men was almost perfect, never better, and during the entire encampment, there were only fifteen men taken sick and three excused from duty. This is attributable to good food, good water and proper rest at night, with a clean camp in every particular.

I am, sir, very respectfully,

A. C. BELDEN,

Surgeon 8th Regiment Infantry, O. N. G.

AKRON, O., November 15, 1887.

Col. A. L. Conger, Commanding 8th Regiment Infantry, O. N. G. Akron, Ohio:

SIR: I have the honor to submit the following report of the receipts and expenditures of the encampment of the Eighth Regiment Infantry, O. N. G., at Galion, Ohio, August 23 to 28, inclusive:

RECEIPTS.

Received for subsistence.....	\$888 00
“ transportation	122 00
“ horse hire.....	63 00
“ forage for horses.....	10 50
“ from sutler	40 00
	<hr/>
	\$1,123 50

EXPENDITURE.

Paid for subsistence.....	\$762 09
“ carpenter work, etc.....	69 75
“ horse hire.....	23 50
Paid N. Y., P. & O. R. R. for transportation.....	68 00

Paid for help and extra provision.....	\$36 30
“ lumber	42 85
“ printing and telegraphing.....	22 69
“ repair of gun-shed and fence destroyed by boys.....	40 00
“ rent of tents.....	30 00
“ firing morning and evening gun.....	25 00
“ medical supplies.....	51 49
“ band	144 00
“ stakes and tent-poles.....	7 37
	<hr/>
	\$1,323 04

RECAPITULATION.

Receipts.....	\$1,123 50	
Expenditures		\$1,323 04
Expenditures over receipts.....	199 54	
	<hr/>	<hr/>
	\$1,323 04	\$1,323 04

Respectfully submitted.

JAMES TAGGART,
First Lieutenant and Quartermaster 8th Regt. Infantry, O. N. G.

HEADQUARTERS NINTH BATTALION OF INFANTRY, O. N. G.,
COLUMBUS, O., August 10, 1887.

Major-General Henry A. Axline, Adjutant-General of Ohio, Columbus, O.:

SIR: In compliance with orders received from General Headquarters, I herewith submit the following camp report :

The Ninth Battalion of Infantry, Ohio National Guard, encamped at Wilmington, Ohio, July 28 to August 2, both days inclusive. The encampment was within the enclosure of the Clinton County Fair Grounds. The grounds were well shaded and elevated. The water pure and plenty, being supplied from wells on the grounds.

A healthful, as well as a pleasant location, was among other things that prompted the Major commanding in selecting Wilmington as the place of encampment, and I feel gratified that the general good health and pleasure of the command far exceeded that of any previous encampment.

Owing to the absence of our Surgeon, I am unable to give in this report an exact account of the number reporting for excuse from duty on account of illness, notwithstanding a memoranda was taken of the number temporarily treated, which was eight. This excellent health record is due to many causes, but mainly to the fact that nearly all the tents were floored, and nearly every man had a soft, dry bed to sleep on.

The entire command was supplied with cots and bed-ticks, which they brought to camp with them, and which were filled with clean dry straw supplied on the grounds, thus securing that needed rest which is necessary to ward off disease, as well as to prepare for the labors of the following day.

Special attention was given the culinary department of the command, and it can be said that the battalion enjoyed good wholesome food and plenty of it.

The weather was dry and exceedingly warm, in consequence of which battalion drill was limited to once a day, more attention being paid to company skirmish drills, guard mounting and general instructions of officers and non-commissioned officers.

The requirements of General Orders, No. 9, dated A. G. O., June 5, 1887, were carefully complied with, as were also General Orders, No. 8, as nearly as practical, which are acknowledged a great advantage to the Ohio National Guard, in having the things pointed out that are most likely to come into use in active service.

Eleven officers and one hundred and fifty-six enlisted men ; total, one hundred and sixty-seven, constituted the number in camp.

This command is composed of but three companies and the field and staff, one hundred and ninety-two officers and men, and is expected, as well as it is the desire of all concerned, to enjoy the advantages and immunities granted a regimental organization, and when called upon to do the same duties. With so few in number we are compelled to admit that we are unable to perform such service, which in a manner, render us inferior to other organizations in the same branch of the service ; and I would respectfully recommend that at least three more companies be recruited and attached to this command. Even then this command would not compare in numbers with the other regimental organizations in the O. N. G., but would accord certain advantages to us under the law, which otherwise we can not enjoy.

As to regimental or brigade encampments little need be said, but in my opinion, more good results are obtained from the former than the latter, and that brigade encampments are quite essential, when occurring every three or four years, and then the commanding officer and staff should be appointed by the Governor at least one year prior to the encampment, and the same promulgated accordingly.

Before closing this report I desire to thank Adjutant-General H. A. Axline, and Inspector Lieutenant A. C. Sharpe, of the U. S. A., for their continued sojourn with us in camp, for favors and courtesies shown us, and for the instructions received from them, which otherwise we would not have received.

I have the honor to subscribe, your obedient servant,

BENJ. F. PAYNE,
Major Commanding 9th Battalion Infantry, O. N. G.

COLUMBUS, O., October 27, 1887.

Major Benj. F. Payne, Comd'g 9th Battalion Inf't'y, O. N. G., Columbus, O. :

SIR: I have the honor to submit the following report as Quartermaster of the 9th Battalion, during the encampment at Wilmington, O., from July 28th to August 2d, both days inclusive :

RECEIPTS.

Received from the State for subsistence.....	\$364 40
“ “ horse hire.....	18 00
“ “ transportation	6 00
	\$388 40

EXPENDITURES

Paid J. C. Colgen for subsistence	\$35 38
“ J. R. Hawley “	153 43
“ “ for medical supplies	12 75
“ “ for horse hire	18 00
“ W. S. Ward et al. for transportation.....	6 00
	\$225 56

RECAPITULATION.

Amount received from State	\$388 40	
“ expended	\$225 56	
Balance on hand	162 84	
	<u>\$388 40</u>	<u>\$388 40</u>

Account with field and staff and companies for subsistence:

Field and staff, 6 men, @ 40c. per day	\$14 40	
To subsistence issued	\$11 36	
To balance due field and staff	2 44	
	<u>\$14 40</u>	<u>\$14 40</u>

Company A	\$124 80	
To subsistence issued	\$75 33	
By balance due Co. A.....	49 47	
	<u>\$124 80</u>	<u>\$124 80</u>

Company B	\$102 80	
To subsistence issued.....	\$48 37	
By balance due Co B	54 43	
	<u>\$102 80</u>	<u>\$102 80</u>

Company C	\$122 40	
To subsistence issued.....	\$65 90	
By balance due Co. C.....	56 50	
	<u>\$122 40</u>	<u>\$122 40</u>

Cost of subsistence furnished 9th Battalion Infantry, O. N. G., during the above encampment :

Shoulder meat.....	10 cents per pound.	
Side bacon	11 “ “	
Fresh beef	4 ³ / ₄ “ “	
Coffee	25 “ “	
Sugar	5 ³ / ₄ -6 ¹ / ₄ “ “	
Candles.....	13 “ “	
Vinegar.....	25 “ gallon.	
Beans.....	\$2 40 “ bushel.	
Flour	2 30 “ 100 lbs.	
Bread	3 “ loaf.	
Rice	6 ¹ / ₄ “ pound.	
Salt	1 “ “	
Pepper.....	18 “ “	
Soap	5 “ “	
Potatoes	95 “ bushel.	
Ham... ..	12 ¹ / ₂ “ pound.	

Very respectfully,

JOHN H. BELLAIR,
First Lieut. and Quartermaster 9th Battalion Inf't'y, O. N. G.

HEADQUARTERS THIRTEENTH REGIMENT INFANTRY,
OHIO NATIONAL GUARD,

SPRINGFIELD, O., *July 12, 1887.*

Gen'l H. A. Axline, Adjutant-General of Ohio:

DEAR SIR: I have the honor to report that in compliance with Special Orders No. 89, from General Headquarters, the Thirteenth Regiment, Ohio National Guard, encamped at the fair grounds in Dayton, Ohio, from the 7th to the 12th of July, both days inclusive.

Such arrangements were made and such orders had been issued as to cause all the companies to reach camp before noon on the 7th inst. This routine of camp duty, as provided in General Orders, No. 9, from General Headquarters of Ohio, was at once assumed and minutely observed during the encampment.

The following orders were issued from Regimental Headquarters during the encampment:

HEADQUARTERS THIRTEENTH REGIMENT INFANTRY,
OHIO NATIONAL GUARD,

DAYTON, O., *July 7, 1887.*

ORDERS, No. 1.

I. In honor of the distinguished services of the eminent soldier, Major General Thomas J. Wood, now an honored citizen of Dayton, Ohio, and in token of affectionate remembrance of an esteemed commander during the dark days of war, this camp will be known as Camp Wood.

II. The courtesy of the citizens of Dayton and the officers in charge of these grounds, in granting us the privilege of their use for encampment purposes, is such as to put every member of the regiment upon his honor in guarding the beautiful grounds and elegant property from every species of injury.

Any one detected in violating this principle, and found guilty in the least degree of the slightest interference with buildings, fences or other property, will receive the punishment such conduct deserves.

By order of

W. J. WHITE,
Colonel Commanding.

D. C. PUTNAM, *1st Lieutenant and Adjutant.*

HEADQUARTERS 13TH REGIMENT INFANTRY, O. N. G.,

CAMP WOOD, DAYTON, O., *July 8, 1887.*

ORDERS, No. 2.

In accordance with General Orders, No. 9, Adjutant-General's office, the routine of camp duty is hereby ordered:

Reveille	5:30	A. M.
Assembly immediately after reveille.		
Breakfast call	6:30	"
Sick call	7:00	"
Drill call	7:30	"
Recall from drill	8:30	"
Fatigue	8:30	"
Guard mounting	9:00	"
Recall from fatigue	9:30	"
Battalion drill	10:00	"
Recall from drill	11:30	"

First Sergeant's call.....	11:45	A. M.
Dinner call	12:00	M.
School call for non-commissioned officers.....	1:30	P. M.
Battalion drill	2:30	"
Recall	4:30	"
Supper call	5:30	"
Dress-parade	6:30	"
Officers' school	7:30	"
Tattoo	9:30	"
Taps	10:00	"

By order of

W. J. WHITE,
Colonel Commanding.

D. C. PUTNAM, *1st Lieutenant and Adjutant.*

HEADQUARTERS 13TH REGIMENT INFANTRY, O. N. G.,
CAMP WOOD, DAYTON, O., *July 10, 1887.*

ORDERS, No. 3.

The regiment will form to-morrow at 2:30 P. M., upon the parade ground, for review and muster by General H. A. Axline, Adjutant-General of Ohio. Company commanders will see that the muster-rolls are properly prepared, and that each man is properly accounted for.

By order of

W. J. WHITE,
Colonel Commanding.

D. C. PUTNAM, *1st Lieutenant and Adjutant.*

HEADQUARTERS 13TH REGIMENT INFANTRY, O. N. G.,
CAMP WOOD, DAYTON, O., *July 11, 1887.*

ORDERS, No. 4.

Company commanders will have the tents of their respective companies loosened, ready to drop at "The General," which will be sounded precisely at 8 A. M. to-morrow.

Each company commander will deliver to the Regimental Quartermaster, at his quarters, the tents, poles, pins, files, etc., for which he is responsible, immediately after the sounding of "The General."

The time and order of returning to company armories will be subsequently announced.

The Colonel commanding hereby expresses his appreciation of the zeal, enthusiasm and friendly emulation exhibited since arrival in camp, and the manifest desire of officers and men to excel in the duties of the soldier. He desires to impress upon the minds of all connected with the 13th Regiment the great importance of thorough acquaintance with the tactics. Much that is left to be learned in camp should be mastered in the armory. Let the members of this regiment determine to be equal to the best in the State, and let each company do its full share toward such achievement. The result will fully justify the necessary effort.

By order of

W. J. WHITE,
Colonel Commanding.

D. C. PUTNAM, *1st Lieutenant and Adjutant.*

This encampment brought, what is now the 13th Regiment, together for the first time. As an organization it could, perhaps, scarcely have assembled under more unfavorable and disadvantageous circumstances. Aside from the recent consolidation of the fragments of two regiments, many of the officers appeared in a camp of the Ohio National Guard for the first time. In most of the companies there had been recent changes among the officers, many of whom had but just been commissioned. In the formation of the regiment almost all the companies found themselves in positions in which they had never before served. It did not require great skill to reach the ready conclusion that what the 13th Regiment needed was *instruction*.

Officers and men soon appreciated the necessity for severe drill, and unceasing effort for improvement. So cordially did all apply themselves to the work in hand that progress was daily apparent, and results very encouraging.

The time allotted was quite too short to produce gratifying results. Indeed I doubt the propriety of an encampment for so brief a period.

Adjutant-General Axline and Lieut. Sharpe spent several days in camp, and rendered valuable services in imparting the needed instruction.

The citizens of Dayton did everything possible to contribute to the interest and pleasure of the encampment, and placed the 13th Regiment under sincere obligations.

Great emulation was awakened among the organizations of the regiment, and I feel warranted in predicting that the regiment will never again present so many occasions for criticism.

Your attention is invited to the reports of Quartermaster Burt Whiteley and Surgeon W. W. Hall, accompanying this report.

Respectfully submitted.

W. J. WHITE,
Colonel 13th Regiment Infantry, O. N. G.

HEADQUARTERS MEDICAL DEPARTMENT,
THIRTEENTH REGIMENT INFANTRY, O. N. G.,
SPRINGFIELD, OHIO, ———, 1887.

To Col. W. J. White, Comd'g 13th Regiment Infantry, O. N. G.:

SIR: I have the honor to make the following report of the annual encampment, held at Camp Wood, Dayton, Ohio, from July 7th to 12th, inclusive:

The camp was well located in all the essential features; plenty of good water and shade and suitable elevation.

In some of the companies there was not sufficient care in the preparation of beds. They should be so made as to be aired every morning, without making litter about the tents. In some, again, the officers do not exercise sufficient care in watching over the diet of their men. Many of them eat too freely of fresh vegetables when not accustomed to them at home, and to this cause can be traced nearly every case of diarrhoea, and as is well-known, this disease includes the majority of all occurring in camp.

The per cent. of men sick was very small. A very few cases of exhaustion from drill occurred, but none of real sunstroke.

No deaths or accidents.

With no recommendations other than those mentioned,

I am, very respectfully,

W. W. HALL,
Surgeon 13th Regiment Infantry, O. N. G.

SPRINGFIELD, O., September 30, 1887.

To Col. W J. White, Comd'g 13th Regt. Infantry, O. N. G., Springfield, Ohio. :

SIR: I have the honor to submit the following report, as Quartermaster of the 13th Regiment, during the encampment held at Dayton, O., from the 7th to the 12th days of July, 1887, inclusive.

EXPENSES.

A. L. Bauman, for bread.....?	\$59 34
" " milk.....	20 38
L. B. Bimm, for groceries.....	160 73
Kiefaber & Bro., for groceries.....	47 88
E. Bimm & Son, for ice.....	12 40
Weakley, Worman & Co., groceries.....	102 38
N. Jacobs & Co., for meat	331 60
	<hr/>
	\$734 71

Balance due Co. A.....	43 87
" " B.....	29 49
" " C.....	16 23
" " D.....	12 30
" " E.....	2 68
" " F.....	29 87
" " G.....	45 19
" " H.....	36 31
" band.....	17 94
	<hr/>
	\$968 59

Band—bonus contracted for by Lieut.-Col. Thompson, and paid by assessments pro rata.....	85 00
Seven horses, six days, @ \$1.50.....	63 00
Hauling baggage, both ways.....	54 00
Tent-pins (due from State).....	9 00
	<hr/>
Total	\$1,179 59

RECEIPTS.

Bonus of band received by assessment.....	\$85 00
Overdraft of headquarters.....	27 79
Received from State.....	1,057 80
Balance due from State	9 00
	<hr/>
Total	\$1,179 59

Respectfully submitted.

BURT H. WHITELEY,

First Lieutenant and Quartermaster 13th Regt. Infantry, O. N. G.

HEADQUARTERS FOURTEENTH INFANTRY, O. N. G.,
COLUMBUS, O., November 2, 1887.

General H. A. Axline, Adjutant-General, Columbus, Ohio :

SIR: Pursuant to General Orders, No. 11, and Special Orders, No. 110, from General Headquarters, Adjutant-General's office, companies A, B, F and L, Columbus; C, Westerville; D, Marysville; E, Mt. Gilead; G, Richwood; K, Delaware; with the field, staff and band, reported at the armory in Columbus on the morning of Sept. 6th. After making a short parade we took the C. H. V. & T. train for Lancaster. At Canal Winchester we were joined by company H, and on our arrival at Lancaster we were received by company I, with a committee of citizens, and at once proceeded to the grounds of the Fairfield County Agricultural Society, containing about eighty acres, adjoining the corporate limits of the city of Lancaster, and overlooked by the historic Mt. Pleasant.

Our camp having previously been platted, the command proceeded to pitch tents. In a short time dinner was served, guard lines established and Camp Wm. T. Sherman was a reality.

The orders from General Headquarters, establishing camp routine, were promulgated. Lieutenant A. C. Sharpe, 22d Infantry, U. S. A., reported on the afternoon of the first day, remaining during the entire camp and accompanying us on our eastern trip.

Active continuous work occupied the time of the entire week; not an hour was wasted. When not on drill, we profited by Lieutenant Sharpe's presence to have school and lectures for both commissioned and non-commissioned officers. Many points of profit in tactics and the customs of service were gained thereby.

On Thursday we were visited by Adjutant-General Axline, who remained until Friday evening. A large part of Saturday was occupied by a very thorough inspection of the command, Lieutenant Sharpe being the inspecting officer. Sunday was observed, as has always been our custom, by religious services, in which the entire command took part, as it was their pleasure to do, listening to a very able discourse from our worthy Chaplain, Rev. W. E. Moore, D. D. Late in the afternoon tents were struck and baggage packed preparatory to starting on our trip east to take part in the dedicatory services of the monument erected by our State on the battle field of Gettysburg to the memory of the gallant men from Ohio, who fought in that battle, and to be present at Philadelphia and take part in the centennial anniversary of the adoption of the Constitution of the United States.

We feel that this camp was a very profitable one. Never were the officers and men of the command more enthusiastic and ready to work.

Every day's active work was closed with dress parade and review, at which our progress was each time marked for the better.

I desire to acknowledge our appreciation of the elegant treatment we received at the hands of the good people of Lancaster. They were not content with providing camp grounds and accessories, but had for each tent a floor. They erected arches over their streets, decorated their buildings, cheered us continually by their presence, adorned us with beautiful flowers, and, in addition, presented us with a purse of money to help pay our expenses east.

At eight o'clock Sunday evening we boarded our train of ten coaches and two baggage cars, to be our home for the next eight days. Our train made a quick run to Columbus, stopping there only long enough to change engines and bid good-bye to friends.

After a pleasant trip over the picturesque B. & O., with but a few stops and nothing to mar our pleasure, we arrived Tuesday morning at daybreak at Gettysburg. There disembarked in a drizzling rain, but a little of the hardships endured by the soldiers of twenty years ago, and at once marched to our camp on East Cemetery Hill.

The task of platting and pitching tents was begun at once, but before completed or breakfast served, a pelting rain came down upon us, lasting for some time, resulting in all being soaking wet, but far from unhappy.

The rain over, our camp was soon established, and, in memory of General Hancock, was given his name.

From the protracted rains previous to our arrival, the ground was saturated, and from the morning rain, our tents soaked, and being tendered by the citizens of Gettysburg numerous places in buildings, it was decided best to accept of the rink as a place more preferable for sleeping, but maintaining in all other ways our camp.

Wednesday, the day of the ceremonies, opened threatening, but by nine o'clock the clouds broke away and the sun shined upon us. At day-break a national salute was fired by a section of Battery E, 1st Light Artillery, that accompanied us, Lieut. Ogden commanding.

At ten o'clock we received His Excellency, Governor Foraker and staff, with the Ohio Memorial Commission, and escorted them to the National Cemetery, where the ceremonies were held. At their close, while a salute of nineteen guns was being fired in honor of the occasion, a sad accident occurred to Corporal Orris Grisso, of Battery E, by the premature discharge of the piece. He was immediately taken to the hospital where, by special orders of Governor Foraker, every attention was given him, but, after eight days of suffering, our Great Commander called him to his final home.

At five o'clock tents were struck and we again took our cars for Philadelphia, arriving there Thursday morning. This day was given to sight-seeing and preparing for the parade.

Friday the command was early astir and ready. We left the depot grounds where, through the kindness of the B. & O. R. R. officials we were permitted to camp, at nine o'clock, to receive Governor Foraker and staff and take route to our rendezvous. It was nearly twelve o'clock noon when the bugle announced that our time to close in the grand column of thirty thousand men had come.

About five o'clock we arrived at our camp, having marched fifteen miles, equipped with knapsack and blanket, haversack and canteen.

It has never been my custom in reports to speak in praise of the Fourteenth Regiment, and I hope to be pardoned on this occasion if I say that the men never did so well, privates and officers vying to maintain Ohio's proud reputation for solid citizen soldiery; never flagging, but keeping the same quick step and soldiery bearing at the last as at the beginning, receiving at numerous points rounds of applause, being dressed in regulation fatigue, with no showy uniform to attract, only its work merited the ovation which the regiment received.

At midnight we left for Washington, D. C., arriving early Saturday. The time until four o'clock was occupied in viewing the many sights of our National Capital. We were permitted to pass the historic Harper's Ferry in day-time, and after a quick, safe ride arrived home, feeling well repaid for time and money expended.

I have included this description of our eastern trip in my camp report, because we made it part of our camp, though receiving no compensation, subsistence or transportation whatever from the State for the same.

Instead of doing six days' camp duty we did thirteen, with pay only for six days; the National Guard of Ohio was not fortunate enough to have funds placed at their disposal by the state to pay expenses of like nature, as was the case in many states. Massachusetts, for instance, made an appropriation of \$40,000 to send the First Massachusetts Regiment to Philadelphia.

On this occasion the Fourteenth Regiment, being invited and in view of Ohio's approaching centennial, deeming it but just that our State should be represented by guardsmen on that occasion, as it had been requested, assumed to go at our own expense, for which see Treasurer's report appended.

Reference is also made to the reports of Surgeon Guerin, as to the health of the

command, and of Quartermaster Guitner for subsistence at Lancaster; also to the consolidated morning reports for strength and attendance.

I again renew my suggestion as to the purchase or lease by the State of a permanent camp ground, properly drained, sinked and provided with water, which will insure better accommodations, health, comfort and discipline, with no trouble and anxiety, to say nothing of expense to the commanders, in the yearly location of camps.

Respectfully,

GEO. D. FREEMAN,
Col. Comd'g Reg't.

COLUMBUS, O., September 20, 1887.

George D. Freeman, Col. Comd'g 14th Reg't, O. N. G.:

SIR: In obedience to orders we accompanied the regiment to camp, near Lancaster, O., on September 6, 1887.

The camp was well located, drainage good, and the general sanitary condition was all that could be desired. There was an abundant supply of good pure water, both for culinary and bathing purposes.

The food furnished by the Quartermaster's department was, as heretofore, of good quality and sufficient quantity. All these essential attributes, with the strict attention and willing compliance of the men and officers under your command, did much to make this the most beautiful and orderly camp within the experience of the regiment.

Most of the sickness contracted was of a trivial nature, occasioned by indiscretions in eating or exposure.

The abuse of alcoholic stimulants, which is usually excessively indulged in during camp, was almost entirely eliminated from this camp, which would imply a higher moral standard than is usually accredited to soldiers of the National Guard, which should certainly be a source of congratulation to the officers and men of your command.

We do not coincide with the views of some surgeons of the Ohio National Guard, in reference to "the overwork in camp." We are of the opinion that it is much better for the health of the men to be compelled to work, as they do in your command, than to idle away a greater portion of the day.

It was clearly demonstrated during this encampment that after a day spent, as it was at Lancaster, that when "taps" sounded, their beds presented greater attractions than breaking guard and seeking pleasure outside the camp, and in so doing were well able for all duty required of them the following day.

We would respectfully recommend that in the future all recruits be examined and passed upon by the surgeons as to their physical fitness. This year found one man suffering with a rupture of long standing, another who had lost the first finger of the right hand, long before he was enlisted, and several with defective eyesight.

The above are cited to show the necessity of such an examination as recommended.

Our hospital steward's reports show the whole number sick, twenty-nine. Of this number four were excused from duty two days, and twenty-five one day each.

On breaking camp nearly or quite all were reported for duty.

Our hospital steward, John W. Richards, performed his duties satisfactorily, and his unremitting efforts to relieve all who had occasion to apply for assistance is worthy of mention.

During the visit of the regiment to Pennsylvania, the general health of the men was exceptionally good, considering the inclement weather experienced on the route, and at Gettysburg. The only serious accident that occurred was the fatal wounding of Otto Grisso, of Battery E, 1st L. A., by the premature discharge of a cannon, while firing a salute at Gettysburg.

To Lieut. A. C. Sharpe, of the 22d Infantry, U. S. A., we are indebted for many suggestions of practical information.

Respectfully submitted.

L. T. GUERIN, *Surgeon.*
F. GUNSAULUS, *Ast. Surgeon.*

COLUMBUS, O., November 2, 1887.

Col. Geo. D. Freeman, Commanding 14th Infantry, O. N. G.:

SIR: I have the honor to submit the following report, showing the receipts and expenditures of the Quartermaster at the annual encampment at Lancaster, Ohio, September 6 to 11, 1887:

RECEIPTS.

For subsistence.....	\$1,224 00
transportation	78 30
	<hr/>
	\$1,302 30

EXPENDITURES.

To Andrew Bauman	\$721 40
August Schleckman	57 22
Timmes Bros	157 76
A. Getz	45 50
A. O. Bear.....	4 50
Adams Express Co	2 80
L. E. Decker	5 00
W. H. Pillow.....	12 00
Central Union Telephone Co.....	1 50
J. C. Miller.....	1 00
Engelke & Bigelow	6 00
A. B. Coit, Treasurer.....	287 62
	<hr/>
	1,302 30

Very respectfully,
Your obedient servant,
H. A. GUITNER,
Quartermaster 14th Infantry, O. N. G.

HEADQUARTERS 16TH REGIMENT INFANTRY, O. N. G.,
SANDUSKY, O., October 1, 1887.

Gen. H. A. Axline, Adjutant-General of Ohio:

SIR: I have the honor to report that pursuant to Genaral Orders, No. 11, Adjutant-General's office, June 25, 1887, the eight companies composing the 16th Regiment, to wit: one from Napoleon, one from Bryan, one from Fostoria, three from Toledo, one from Clyde, and one from Sandusky, reported in camp promptly, as

designated in orders, the Fostoria, Clyde and Sandusky companies arriving in camp the evening before the time designated, the other five companies reporting in camp August 17th, at 11 o'clock A. M.

The regular camp routine, as prescribed in General Orders, was at once entered upon, and followed to the letter during the encampment. We had seven battalion drills and six dress-parades.

The regiment was thoroughly exercised in the skirmish drill, the capacious grounds allowing the complete execution of any movements prescribed in the tactics. Target practice occupied the company teams (five marksman selected from each company) two days, and resulted in great good to the command. Company B, Sandusky, made the best score at all distances, and was awarded the championship gold badge, which is the property of the regiment, and will be competed for at each annual encampment.

The grounds were well adapted for a military encampment, being large, easy of approach, and covered with a sod sufficient to resist any material effect from days of rain. Every provision had been made for an abundance of water, ice and fuel.

The health of the troops was phenomenal, and in all respects the encampment was, in my judgment, as profitable and satisfactory as any held by the regiment.

We were honored by a visit from the Commander-in-Chief, Governor Foraker, and the battalion was inspected by the Adjutant-General in person.

To Captain J. T. Haskell, of the 23d Infantry, U. S. A., on detail at the camp, much credit is due, as he contributed very materially to the success of the encampment; always ready to impart instruction, council and advice. Too well informed in theory and practice of military science and usages to occupy the role of a mere critic, he most completely filled the much higher and more important station of military instructor.

I take this opportunity to greatly thank the officers at General Headquarters for the many courtesies and favors extended by them, and the officers and men of my command for the promptness and willingness with which they responded and complied with all the requirements of the encampment.

Camp Phil. Sheridan will long be remembered with pleasure by the officers and men of the 16th Regiment, and we really bid it good-by with regret when we took our departure for home, on the afternoon of August 22, 1887.

Very respectfully,

C. M. KEYES,
Colonel Commanding 16th Regiment Infantry, O. N. G.

NORWALK, O., September 28, 1887.

C. M. Keyes, Colonel 16th Regiment Infantry, O. N. G.:

DEAR SIR: I have the honor to submit the following report of sickness and casualties in the 16th Regiment, O. N. G., during the encampment at Camp Philip Sheridan, Port Clinton, Ohio, from August 17th to 22d, inclusive, together with the sanitary condition and other matters properly belonging to the medical department.

Total number taken sick.....	53
Total number excused from duty.....	22
Total number sent home.....	1

Of the cases treated, there were a large proportion of them bowel troubles brought on by change of diet, water, etc. Aside from this, the health of the regiment was all that could be desired. Those who were excused, with perhaps two exceptions, were only excused from one day's duty.

The location of camp was complete in every respect, except it was a little too

far from town, making the hauling to and from town a little hard. There was plenty of room for tents, streets, cook houses, parade and drill grounds, etc. The sanitary condition was good in every part of the camp; the litter coming from the several cook houses was, through the kindness of Quartermaster Sloane, deposited in barrels and taken away every day, which made a decided improvement over former encampments, when it was put in pits at the rear of cook houses. The food was plenty and of an excellent quality. The water used was lake water, with the exception of one day; the man that had the contract for furnishing water was to use nothing but lake water, but for some reason unexplained, took it that day from the river, which was very poor, and as soon as I found out what he was doing, I reported to the Quartermaster, who promptly attended to it.

I desire to express my thanks for the willingness and kindness shown me by the members of the regiment on all occasions; also to congratulate you and all who participated on the success of the encampment.

I have the honor to be, very respectfully,

Your obedient servant,

A. L. OSBORN,

Surgeon 16th Regiment Infantry, O. N. G.

SANDUSKY, O., November 15, 1887.

Colonel C. M. Keyes, 16th Regiment Infantry, O. N. G., Sandusky, O.:

DEAR SIR: I beg leave to herewith submit my report as Quartermaster of the 16th Regiment during the encampment of said regiment at Port Clinton, Ohio, August 17 to 22, 1887, inclusive.

The total expenses of said encampment are shown in exhibit "A" hereto attached. Of this amount I have paid from funds in my hands, including fifty dollars received from sutler for privileges, the items shown in exhibit "B" hereto attached, amounting in all to three hundred and fifty-six dollars and forty-five cents. There still remain unpaid bills amounting to the sum of two hundred and sixty dollars and forty-seven cents, as shown by exhibit "C."

Total expenses	Exhibit "A".....		\$616.92
Amount paid	" "B".....	\$356.45	
Balance due	" "C".....	260.47	
			<hr/>
		\$616.92	\$616.92

Exhibit "A."

1887.

August 16. Baggage and cooks to camp.....	\$1 70
Telegrams.....	59
Coal, Co. A.....	2 00
Wood and lumber.....	3 85
Baggage, Co. C.....	50
Expressage, U. S. Express Co.....	90
Telegrams.....	30
Baggage.....	1 00
Coal, Co. A.....	1 00
Oats for horses 16th Regiment.....	5 25
Groceries, Headquarters 16th Regiment.....	2 95
Baggage, Co. B.....	1 00
Coal and lumber.....	3 55
Baggage, "F".....	1 00
Baggage, "H".....	1 50
Cook shanties and eating sheds.....	200 00

1887.

August 16.	Hire of horses.....	30 00
	Hire of stores for headquarters and utensils.....	8 76
	Hire of stores for band.....	1 00
	Hire of furniture.....	7 80
	Freight, headquarter tents	4 85
	Palmer Pruitt, care of horses.....	10 50
	Water for encampment.....	20 00
	Saddle cloths and expenses.....	6 00
	Sundries	1 25
	Baggage.....	50
	Paper	45
	Drayage, packing tents etc., and stakes.....	21 00
	Telegrams.....	1 02
	J. F. Mack Bros., printing.....	12 00
	Postal cards.....	25
	Postage	50
	Expense	40
	Baggage, Pettigrew.....	2 00
	M. & C.....	68
	Postage	40
	Rent of grounds.....	25 00
	Care of horses, hay, straw and barn.....	14 50
	Wood.....	7 50
	Quarters for cook.....	9 15
	Ice	18 87
	Transportation of baggage.....	97 55
	Storage of tents, loading and unloading.....	35 75
	Horses.....	17 00
	Medical supplies.....	35 15
	Total.....	\$616 92

Exhibit "B."

1887.

August 16.	Baggage and cook transportations to camp.....	\$1 70
	Telegrams.....	59
	Coal, Co. "A".....	2 00
	Wood and lumber	3 85
	Baggage, Co. C.....	50
	Expressage, U. S. Express Co. { 65 25	90
	Telegrams	30
	Baggage.....	1 00
	Coal, Co. H.....	1 00
	Oats for horses 16th Regiment.....	5 25
	Groceries	2 95
	Baggage, Co. B.....	1 00
	Coal and lumber.....	3 55
	Baggage, Co. F.....	1 00
	Baggage, Co. H.....	1 50
	Cook shanties and eating sheds (carpenter work).....	200 00
	Hire of horse.....	30 00
	Hire of stores and utensils.....	8 76

1887.

August 16. Hire of stores for band.....	1 00
Hire of furniture.....	7 80
Freight, headquarter tents.....	4 85
Palmer Fruit, care of horses.....	10 50
Water for encampment.....	20 00
Saddle cloths and expenses.....	6 00
Sundry expenses.....	1 25
Baggage.....	50
Paper.....	45
Drayage, packing tents etc., and stakes.....	21 00
Telegrams.....	1 02
Printing, J. F. Mack & Bros.....	12 00
Postal cards.....	25
Postage.....	50
Expense.....	40
Baggage, Pettigrew.....	2 00
Expense.....	68
Postage.....	40
Total.....	\$356 45

Exhibit "C."

1887.

August —. Rent of grounds.....	\$25 00
Care of horses, hay, straw and barn.....	14 50
Wood.....	7 50
Quarters for cook.....	9 15
Ice.....	18 87
Transportation of baggage.....	97 55
Storage of tents, loading and unloading.....	35 75
Horses.....	17 00
Medical supplies.....	35 15
Total.....	\$260 47

I have sent vouchers to the Adjutant-General's office for such sums as I am authorized to draw for, and hope to be able to liquidate the balance of our indebtedness when the money is received.

Very respectfully,

THOMAS W. SLOANE,
First Lieutenant and Quartermaster 16th Regiment Infantry, O. N. G.

HEADQUARTERS SEVENTEENTH REGIMENT, O. N. G.,
COLUMBUS, O., October 8, 1887.

General H. A. Axline, Adjutant-General of Ohio :

SIR: I have the honor to make a report of the Seventeenth Regiment, Ohio National Guard.

In accordance with General Orders, No. 11, from your office, the regiment went into camp at New Lexington, Perry county, Ohio, from August 23d to 29th, inclusive.

My command, besides field, staff and band, consists of the following companies, and from the following places :

Company A, New Lexington.

" B, Zanesville.

" C, Mt. Vernon.

" D, Lower Salem.

" E, New Matamoras.

" F, Coshocton.

" G, Newark.

" H, Plimpton.

" K, Hebron.

The total number present for duty was 482. Whole number to be accounted for, 548. The per cent. of attendance was 88.

The camp selected was a large meadow, and so situated as to have excellent drainage, and was laid out according to tactics.

We had plenty of good spring water. The selection of camp was commended by the inspector, Lieutenant A. C. Sharpe, 22d Infantry, U. S. A., who was with us as inspector and instructor, and to him we owe much of our improvement during our stay. His uniform kindness and his quickness in discovering errors, and calling our attention to them, is commendable. His talk at officers' and non-commissioned officers' school made an impression that will be lasting and of great benefit to the regiment.

Allow me, through you, to extend to him my hearty thanks, and ask that he may be sent to us again.

Battalion and company drills were carried out as per your orders.

Special attention was paid to the instruction of guards on duty.

Yourself and Col. Wickham were with us and know the condition of the regiment.

In attendance, discipline, and those qualities that go to make up a good, safe and reliable regiment, I feel that the Seventeenth ranks with the very best.

I submit herewith reports of Surgeon J. H. Gerhardt, and Lieutenant John P. Smith, Quartermaster.

Hoping that my regiment has arrived at the standard you set for it, and that we may improve, so that during the centennial year we may show to other States that the Ohio National Guard ranks where the Ohio soldiers did during the war of the rebellion, and when called upon to defend our State we shall be ready at a moment's notice, and obey orders without a murmur, I close, only adding that regimental encampments give more substantial instruction and make us better soldiers than brigade encampments.

Very respectfully,

E. J. Pocock,

Col. Com'g 17th Regt. Infantry, O. N. G.

SUNBURY, O., September 29, 1887.

Col. E. J. Pocock, Commanding 17th Regiment Infantry, O. N. G.:

SIR: I have the honor to submit the following report of the health of the Seventeenth Regiment Infantry, O. N. G., during its encampment at Camp Jackson, New Lexington, Ohio, from August 23-28, 1887.

The location of the camp was splendid, it being in an open field where the sun had an opportunity of thoroughly drying the tents and bedding during the day, making the health of your command much better than it would have been had the camp been located in a grove.

I inspected the camp every morning and found the sanitary condition very good. The provisions furnished were the very best for the health of the command. The majority of cases of sickness were of a mild character, yielding very readily to treatment.

One man in Co. E became violently insane, and as we had no hospital tent in which to keep him, I ordered him sent home.

The total number reporting at sick call during the six days' encampment was fifty-five; number excused, ten; total number of days lost, thirteen.

In conclusion, I desire to call your attention to the necessity of a hospital tent and medical chest.

I have the honor to be, very respectfully,

J. H. GERHARDT,
Surgeon 17th Regiment Infantry, O. N. G.

QUARTERMASTER'S DEPARTMENT, 17TH REGIMENT INFANTRY, O. N. G.

To Col. E. J. Pocock, Comd'g Reg't:

SIR: Herewith find statement of my account as Quartermaster of the 17th Regiment during the encampment at New Lexington, O., from August 23d to 29th, inclusive:

RECEIPTS.

Received from State for subsistence.....	\$1,161 60
“ “ transportation of baggage	87 50
“ “ horse hire, field and staff.....	72 00
“ “ forage for horses.....	12 00
“ sutler's privilege	137 50
Total.....	\$1,470 60

EXPENDITURES.

For subsistence	\$1,261 34
transportation of baggage	87 50
horses for field and staff	72 00
medical supplies.....	19 30
preparing camp, etc.....	28 46
forage for horses.....	12 00
	\$1,480 60
Amount received.....	\$1,470 60
“ paid out.....	\$1,480 60
“ due Quartermaster	10 00
	\$1,480 60
	\$1,480 60

Statement of account with the field and staff, and companies:

To field and staff for subsistence.....	\$31 20
By subsistence issued.....	\$121 95
To amount overdrawn	90 75
	\$121 95
	\$121 95

ADJUTANT GENERAL.

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To Company A for subsistence	\$115 20	
By subsistence issued.....		\$120 35
To amount overdrawn	5 15	
	<u>\$120 35</u>	<u>\$120 35</u>
To Company B for subsistence	\$151 20	
By subsistence issued.....		\$103 17
By check to balance		48 03
	<u>\$151 20</u>	<u>\$151 20</u>
To Company C for subsistence	\$108 00	
By subsistence issued.....		\$46 89
By check to balance		61 11
	<u>\$108 00</u>	<u>\$108 00</u>
To Company D for subsistence	\$134 40	
By subsistence issued.....		\$114 25
By check to balance		20 15
	<u>\$134 40</u>	<u>\$134 40</u>
To Company E for subsistence	\$110 40	
By subsistence issued.....		\$93 36
By check to balance		17 04
	<u>\$110 40</u>	<u>\$110 40</u>
To Company F for subsistence	\$103 20	
By subsistence issued.....		\$75 77
By check to balance		27 43
	<u>\$103 20</u>	<u>\$103 20</u>
To Company G for subsistence	\$134 40	
By subsistence issued.....		\$138 84
To amount overdrawn	3 84	
	<u>\$138 84</u>	<u>\$138 84</u>
To Company H for subsistence	\$132 00	
By subsistence issued.....		\$112 83
By check to balance		19 17
	<u>\$132 00</u>	<u>\$132 00</u>

To Company K for subsistence	\$141 60	
By subsistence issued.....		\$91 33
By check to balance		50 27
	<u>\$141 60</u>	<u>\$141 60</u>

Statement of prices paid for subsistence:

Bread, per doz.....	\$ 45
Mutton, per lb.....	10
Potatoes, per bu	90
Butter, per lb.....	20
Rice, per lb	8
Eggs, per doz.....	12½
Onions, per bu	1 00
Candles, per lb.....	15
Cheese, per lb.....	14
Salt, per lb	01
Sweet potatoes, per bu.....	2 00
Molasses, per gal	40
Beef, per pound.....	6-10
Ham “	13½
Beans “	04
Sugar “	06
Coffee “	27
Crackers “	06
Cabbage	75
Soap, per box	3 25
Tomatoes, per bu	75
Vinegar, per gal	25
Tea, per lb	60
Milk, per gal	20

Very respectfully,
Your obedient servant,
J. P. SMITH,
1st Lieut. and Quartermaster 17th Reg't Inf'y, O. N. G.

ARMORY TOLEDO CADETS, O. N. G.,
TOLEDO, O., June 30, 1887.

Major-General H. A. Axline, Adjutant-General of Ohio:

SIR: I most respectfully report that the Toledo Cadets, O. N. G., left Toledo May 21, 1887, via L. S. & M. S. R. R. and B. & O. R. R., arriving at Camp George Washington, Washington, D. C., on the evening of the 22d, and at once reported for duty to Major-General C. C. Augur, commanding National drill and encampment. The command took part in all camp duties and ceremonies, including company competition; and were relieved from duty on the morning of June 1, 1887.

I take this occasion on behalf of the command to return our thanks to Governor Foraker, yourself, and Ohioans in general, for words of encouragement at all times during absence from our native State.

I remain, your obedient servant,
WM. V. McMAKIN,
Captain Commanding Company.

HEADQUARTERS SECOND REGIMENT INFANTRY, O. N. G.,

KENTON, OHIO, *July 8, 1887.*

General H. A. Axline, Columbus, O. :

SIR: Having been placed in command of a Provisional Battalion at the National Encampment and drill, held at Camp George Washington, Washington, D. C., from May 23 to May 31, 1887, I beg leave to submit the following report..

On Saturday evening, May 21st, four companies of the Second Regiment of Infantry, O. N. G., left via the B. & O. railroad for Washington, D. C., being companies B, C, G and H, and arrived in the city at 4 o'clock P. M., Sunday, May 22d. The companies proceeded at once to Camp George Washington, where tents were pitched, and everything put in good shape by the men before retiring for the night.

An order was issued from General Headquarters placing me in command of a Provisional Battalion, composed of the following Ohio troops: The Toledo Cadets; Wooster Guards, Company D, 8th Regiment Infantry; Company G (Newark), 17th Regiment Infantry; Companies B, C, G and H, of the Second Regiment Infantry, and Battery B, First Regiment Artillery, of Cincinnati.

Lieut. Colonel Probert, of the Second Regiment, was the only field officer present of the command other than myself. Adjutant P. A. Campbell, of the Second, being present, acted as Adjutant of the Provisional Battalion.

The regular routine of duties, as promulgated from General Headquarters, were carried out in full.

Morning reports were made each morning, giving total number of available men, sick, etc., and I wish here to thank each company commandant of the Battalion for their promptness and accuracy in furnishing the reports required.

Guard details were made each morning, and the men did their duty promptly and satisfactorily. The Battalion participated in every dress-parade, except one, and the weather was the cause of the non-appearance then, the men all being in their quarters ready to turn out should the rain cease.

The sickness in the camp was not great, and was of a very mild character, the men being cared for by the society of the Red Cross, whose headquarters were on the grounds.

The encampment, I believe, taken as a whole, was a success, the discipline maintained being much better than at Philadelphia two years ago.

The harmonizing of Ohio troops placed under command, outside of their regular regimental officers, was a noticeable feature of the advance in discipline being acquired by the Ohio troops, and I believe will be beneficial to those there encamped, as where a breach of discipline occurred, prompt punishment was administered by the Colonel in command, and the men made to understand that when the Ohio troops were under arms that the army regulations were in force. But two punishments were required.

I am satisfied that no harm will result from the camping of the Ohio troops at Washington, but that nearly every man will be benefited by having seen the drilling of so many of the "crack companies" of America.

The commanding officer, and all the troops under his command, are under special obligations to General Axline for instructions and courtesies shown them while in camp, and all were proud to recognize him as the head of the Ohio National Guard.

Monday morning I asked to be relieved of my Provisional Battalion, which was granted by the General in command, but before leaving headquarters I was assigned to command a Battalion composed of the Moloneux Guards of Brooklyn, eighth separate company of Rochester, New York; Jackson Rifles, of Jackson, Michigan; Grand Rapids Guards, of Grand Rapids, Michigan; Bullene Guards, of Kansas

City, and Company A, First Minnesota, headed by the Capital Cadet Band, was ordered to report and act as escort to the Grand Army of the Republic at Memorial services, to be held at Arlington Heights. The escort conducted the Grand Army as far as the aqueduct, and were then dismissed and returned to camp.

The men were given ample opportunity to see the city and visit all departments, and certainly took advantage of the same, and seemed to have acquainted themselves with everything of importance connected with the government. The schooling in this regard will be of much benefit to them. Everywhere about the city Ohio boys conducted themselves as gentlemen, and earned a good reputation on that score.

At six o'clock P. M., May 31st, Companies B, C, G, and Wooster Cadets (H Company having left Sunday evening), broke camp at 9:40 P. M., and left for home over the B. & O., all the troops arriving safely at their homes without accident or sickness.

Respectfully submitted.

JAMES C. HOWE,
Colonel Commanding Second Provisional Battalion.

ARMORY FIRST CLEVELAND TROOP,
CLEVELAND, O., November 3, 1887.

H. A. Axline, Adjutant-General, Columbus, Ohio:

SIR: I have the honor to report that in compliance with Special Orders, No. 133, from General Headquarters, State of Ohio, the First Cleveland Troop went into camp near Chicago, Illinois, on the 2d ultimo, remaining six days.

The command consisting of three commissioned officers, thirty-five men and thirty-five horses, left Cleveland by special train on the L. S. & M. S. railway at 9 o'clock P. M., Saturday, October 1, and arrived at Camp Sheridan, Sunday, October 2, at 10 o'clock A. M.

Tents were pitched in the grounds occupied by the International Military Encampment Association.

The troop was at once reported for duty to Colonel H. M. Black, U. S. Army, commandant of the camp, and attached to a cavalry battalion under command of Captain C. C. Carr, U. S. Cavalry, consisting of Troop I, 1st U. S. Cavalry, Milwaukee Light Horse Squadron and First Cleveland Troop. As a part of this battalion, it complied with the general regulations and routine of the encampment and participated in the ceremonies incident thereto, besides holding regular mounted drills daily.

On Wednesday, October 5, the occasion of the visit of the President of the United States, the troops, on invitation of the reception committee, acted as personal escort of the President during the parade in the city of Chicago.

On Saturday, October 8th, the troop was inspected by Lieutenant W. S. Scott, 1st U. S. Cavalry.

On the same date it entered into a competitive drill for prizes offered by the encampment managers, and was awarded second prize; the first being given to the Milwaukee Light Horse Squadron, after very close competition, in which the score was 99.738 to 99.438, out of a possible 100, in favor of Milwaukee.

The health of the command was excellent, but two men reported sick during the encampment.

Very respectfully submitted.

GEO. A. GARRETSON,
Captain Commanding 1st Cleveland Troop.

HEADQUARTERS FIRST REGIMENT LIGHT ARTILLERY, O. N. G.,
CLEVELAND, O., *August 30, 1887.*

SIR: I have the honor to transmit herewith my report of the encampment of the First Regiment Light Artillery, O. N. G., at Delaware, Ohio.

Pursuant to General Orders, No. 11, the following orders were issued to the regiment from these headquarters:

HEADQUARTERS FIRST REGIMENT LIGHT ARTILLERY, O. N. G.,
CLEVELAND, O., *July 27, 1887.*

ORDERS, No. 5.

I. Pursuant to General Orders, No. 11, General Headquarters, June 25, 1887, the following instructions concerning the manner of proceeding to the place of encampment at Delaware, Ohio, are hereby issued to the regiment.

II. The officers of the field and staff will report in person to the Colonel commanding, in camp not later than noon, August 10, 1887.

III. The band and Battery A will proceed to camp via the C., C., C. & I. R'y, leaving Cleveland at 7:45 A. M., August 10th, arriving at Delaware at 11:25 A. M.

IV. Battery B will leave Cincinnati via the C., C., C. & I. R'y at 7:15 A. M., arriving at Delaware at 11:15 A. M.

V. Battery C will leave Zanesville at 6:30 A. M., going over the Columbus and Eastern and C., C., C. & I. R'y, arriving at Delaware at 11:20 A. M.

VI. Battery D will leave Toledo via C., H. V. & T. R'y, at 3:55 A. M., arriving at Delaware at 7:23 A. M., to be transported over the Bee Line from Hocking Valley depot to place of encampment.

VII. Battery F will leave Akron by special train at 6 A. M. via Valley Railway for Cleveland, thence via C., C., C. & I. R'y at 7:45 to Delaware, arriving at 11:25 A. M.

VIII. Battery G will leave Marietta at 8 A. M. via C., W. & B. R'y for Athens, thence via C., H. V. & T. R'y to Delaware, arriving at 4:53, to be transported over Bee Line from Hocking Valley depot to place of encampment.

IX. Arrangements in detail for transportation have been made directly through the Adjutant-General's office.

Commanding officers of the batteries hereinbefore named will, on August 8th or 9th, as is to them convenient, ship by freight, over the road assigned to each, their pieces, caissons, harness and camp, and garrison equipage in charge of a suitable detail in command of a non-commissioned officer.

X. Battery E will march overland mounted, leaving Springfield not later than 12 M. August 9th.

XI. Battery H will march overland, mounted, leaving Columbus at 4 A. M., August 10th.

XII. Commanding officers will immediately, upon their arrival in camp, report to the Colonel commanding.

XIII. Commanding officers of batteries are hereby charged with the promulgation of these orders so far as they relate to their respective commands.

By order of

LOUIS SMITHNIGHT,
Col. Comd'g 1st Regiment Light Artillery, O. N. G.

H. M. CLEWELL, *1st Lieutenant and Acting Adjutant.*

In compliance with the above order the regiment reported promptly for camp duty one mile north of Delaware, Ohio, on the C., C., C. & I. R'y, where the loading and unloading of guns and baggage were easily effected. Regular battery drills,

both mounted and dismounted, and target practice, with three-inch rifle pieces and gatling-guns, were had under the superintendency of Adjutant-General Axline and Lieutenant E. S. Benton, of the Third U. S. Artillery, who was present in camp as inspecting and instructing officer by order of the War Department. The target practice with the three-inch rifle and gatling-guns was very satisfactory. Out of one hundred and fifty-three shots fired by the several batteries with the three-inch rifles, distance 1,033½ yards there were 105 direct hits, 8 ricochet hits and 40 misses. A new pendulum hausse, designed by Corporal W. D. Fraser, of Battery A, was used, which is, in my opinion, a great improvement on those now used in the army and I do most respectfully recommend that a suitable number be ordered for the use of the several batteries now having rifled pieces.

TARGET RECORDS OF 3-INCH RIFLE.

August 11th, 12th and 13, 1887, at Delaware, Ohio. Target, 1,033½ yards from gun. Number of shots fired, 153 ; direct hits, 105 ; ricochet hits, 8 ; misses, 40.

Names of officers and men firing.	A	B	C	D	E	F	G	H	I	J	K	L
1. Gen'l Axline..	2	11 7	.....	.....	10	10	8	.....	7 ⁵
2. Lt.-Col. Sintz..	2	7	.....	8	10 10	.....	12	10	7	.....
3. Major Dana.....	5	5	.....	9 10 5	11 9	12 7	8	.....	.....
4. Lieut. Benton..	10	.....	12	....	12 6	5	8 12 10	7
5. Battery A.....	9	9	.....	5	.....	5 5	6 5 11	3	.....	.....	.....	.....
6. Battery B.....	5	.....	.....	4 11 17 11 8	9	8 9 9	.....	7	.....	.....
7. Battery C.....	8	6 10	6	8 1 9	.....	.....	9	.....
8. Battery D.....	8	8 2 11	4	.....	.....	5	9	.....
9. Battery E.....	11	.....	5 9 10 12	10 8	8 5 8 5	.....	11	12 9
10. Battery F.....	9	.....	.....	12	.....	.....	.....	10 9	.....	8	9	.....
11. Battery G.....
12. Battery H.....	5	9	.....	10	6 8	12	.....	.....	7	9
13. Col Smithnight	9	.....	10 8	13	.....	.....	2	.....	7 9

REMARKS.

Target twelve feet square. Elevation, 2°45'.

MISSSES.

Battery A, 3 ; Battery B, 5 ; Battery C, 3 ; Battery D, 5 ; Battery E, 5 ; Battery F, 13 ; Battery G, 3 Battery H, 3.

On Friday, August 12th, Governor Foraker arrived in camp and was received with a Governor's salute of seventeen guns. At the same time Captain E. G. Donaldson, of Battery H, presented the regiment with regimental colors. After dress-parade the Governor and part of his staff reviewed the regiment, and later in the evening a reception was accorded to the Governor and the Artillery Regiment on the Campus grounds by the citizens of Delaware, where a few pleasant hours were enjoyed by all, and at which time the regiment was served with refreshments by the citizens of Delaware.

The conduct of the men was excellent, and the discipline maintained was good. Not a single arrest was made, and not a case of intoxication in the regiment was reported during the entire encampment, and very much good was, in my opinion, accomplished. The regiment was mustered on Sunday morning by Major-General Axline, O. N. G., and inspected by General Axline and Lieut. E. S. Benton, U. S. Artillery, Col. W. S. Wickham, Assistant Adjutant-General, and Col. H. E. Mead, of the Governor's staff.

The sanitary condition of the camp was at all times excellent, thanks to the incessant and most diligent care of Surgeon Cronise, whose report is herewith attached, and to Assistant Surgeons Allen H. Vance, Arthur A. Thomen, Henry T. Sutton, Wilson W. Cullison and Emil Hefferich much credit is due.

Lieut. Alex. C. Caine, Regimental Quartermaster, performed his duties to the entire satisfaction of the regiment, not a complaint of any kind being made.

The aggregate strength of the regiment was 531 officers and men, and the average attendance was 454, being 86% of the whole strength.

The following orders were issued in camp:

HEADQUARTERS 1ST REGIMENT LIGHT ARTILLERY, O. N. G.,
CAMP FORAKER, DELAWARE, O., *August 10, 1887.*

ORDERS, No. 7.

I. Pursuant to General Orders, No. 11, dated General Headquarters, June 25 1887, the undersigned hereby assumes command.

II. In token of the high regard in which Governor Foraker is held by the Ohio National Guard, this camp shall be known as Camp Foraker

By order of

LOUIS SMITHNIGHT,
Col. Comd'g 1st Regiment Light Artillery, O. N. G.

H. M. CLEWELL,
1st Lieutenant and Acting Adjutant.

HEADQUARTERS 1ST REGIMENT LIGHT ARTILLERY, O. N. G.,
CAMP FORAKER, DELAWARE, O., *August 10, 1887.*

ORDERS, No 8.

I. In establishing camp the Colonel commanding desires to impress upon the officers and men of the regiment the necessity of a faithful application to the work of instruction in the various branches of the artillery service, and the short time of encampment should be given up unreservedly to the calls of duty.

II. All bugle calls will be sounded by the trumpeter of the guard, and will be repeated by the trumpeters of each battery.

III. At least one commissioned officer from each battery will be present at each stated roll-call of his battery, and will receive the report.

IV. Commanding officers of batteries will see that morning reports, requisitions and other papers, requiring the attention of the Adjutant, are handed in not later than 8 A.M., and requisitions not so handed in will not be considered until the next day. They will also see that their First Sergeant promptly responds to First Sergeant's call for any orders that may await them.

V. All passes must be signed by the Battery commanders and must be counter-signed by the Post commander or by his order.

By order of

LOUIS SMITHNIGHT,
Col. Com'd 1st Regiment Light Artillery, O. N. G.

H. M. CLEWELL,
1st Lieutenant and Acting Adjutant.

HEADQUARTERS 1ST REGIMENT LIGHT ARTILLERY, O. N. G.,
CAMP FORAKER, DELAWARE, O., August 10, 1887.

ORDERS, No. 9.

The following camp routine will be observed:

Assembly of trumpeters.....	5:20	A. M.
Reveille	5:30	"
Assembly.....	5:35	"
Water and stables	5:45	"
Breakfast call	6	"
Sick call.....	6:30	"
Drill call.....	7:25	"
Assembly.....	7:30	"
Recall	8:30	"
Fatigue call.....	8:35	"
Recall	9	"
Assembly of trumpeters.....	9:10	"
Assembly of guard detail	9:15	"
Adjutant's call.....	9:30	"
Drill call and boots and saddles for mounted and dismounted drill and target practice, the details to be made from day to day.....	10:25	"
Assembly.....	10:30	"
Recall and stables.....	11:30	"
First Sergeant's call	11:45	"
Dinner call	12	M.
Non-commissioned officers' school.....	1:45	P. M.
Drill call and battery target practice.....	2:25	"
Assembly.....	2:30	"
Recall	4:30	"
Water and stables.....	5	"
Supper	5:30	"
Assembly of trumpeters	6	"
Assembly	6:15	"
Dress-parade and retreat.....	6:20	"
Commissioned officers' school.....	7:30	"
Band practice.....	8:15	"
Assembly of trumpeters	9:30	"
Tattoo	9:45	"
Assembly roll call	9:50	"
Taps	10	"

When for any purpose drill is suspended, recall will be sounded immediately after the first call and school of instruction will be held instead.

Challenging will begin at tattoo, and cease at reveille.

By order of

COLONEL SMITHNIGHT.

H. M. CLEWELL,

1st Lieut. 1st Artillery, O. N. G., Acting Adjutant.

HEADQUARTERS 1ST REGIMENT LIGHT ARTILLERY, O. N. G.,

CAMP FORAKER, DELAWARE, O., *August 10, 1887.*

ORDERS No. 10.

I. The Band and Batteries A and F, will leave camp to-morrow, August 15th, at 12.30 P. M.; Batteries B, C and D, will leave camp at 11 A. M.; Battery G will leave camp at 8 A. M. The guns, caissons, camp and garrison equipage of the batteries named will be loaded on cars of the C., C., C. & I R'y company in the following order: Battery G at 7 A. M., Batteries B, C and D at 8 A. M., Batteries A and F and band at 10 A. M.

II. On the eve of the separation of the regiment, the Colonel desires to compliment the officers and men of the regiment upon their military bearing, courtesy, prompt and cheerful compliance with orders, and upon the records made at target practice, and particularly upon their appearance at inspection this morning. In separating from the command, he trusts that it will be the endeavor of every one connected with the regiment to make it the standard artillery regiment throughout the country, and he looks forward with pleasure to meeting his command in camp next year.

III. The Colonel desires also to thank the citizens of Delaware for the many courtesies extended to himself and command, and particularly to the ladies, who so kindly and gracefully supplied headquarters with many beautiful flowers.

By order of

COLONEL SMITHNIGHT.

H. M. CLEWELL,

1st Lieut. 1st Artillery, O. N. G., Acting Adjutant.

Camp was broken on the morning of August 15th, when all the batteries returned to their stations. Batteries E and H, that came mounted overland from Springfield and Columbus, were permitted to leave camp on the preceding day, on account of their overland route. Great credit is due Supt. Robert Blee and train master C. J. Stedwell, of the C., C., C. & I. R'y, for the able management in dispatching the business of loading and unloading the guns and baggage and in the prompt transportation facilities afforded the regiment to and from camp.

I. In closing, permit me to recommend that the batteries having gatling guns, be provided with caissons to conform with the limbers of their pieces.

II. That at the next artillery encampment, a suitable force of infantry be furnished to perform guard duty to prevent the breaking up of sections in the several batteries.

III. That the targets for both rifled pieces and the gatling guns be provided at expense of the State.

I beg leave to return my sincere thanks to the Governor for honoring the regiment with his presence in camp, and to yourself and the officers under you for the kindness and courtesy at all times extended to my command. I am particularly under obligation to Lieut. E. S. Benton, 3rd U. S. Artillery, for his pains-taking care in supervising the work of the regiment and for his valuable assistance and instructions at officers' and non-commissioned officers' schools.

I beg also to compliment your office and your corps of assistants for the prompt

and efficient manner in which the business affairs pertaining to my command have been transacted in your office.

Very respectfully,

LOUIS SMITHNIGHT,

Col. Com'd'g 1st Reg't Light Artillery, O. N. G.

To H. A. AXLINE, Adjutant-General, Columbus, O.

TOLEDO, O., August 22, 1887.

Col. Louis Smithnight, Com'd'g 1st Reg't Light Artillery, O. N. G., Cleveland, O.:

SIR: I have the honor to submit the following report of the sanitary condition of the regiment during its encampment at Camp Foraker, near Delaware, O., from August 10 to 15, 1887.

The camp was pleasantly and healthfully situated near an artificial lake. There was a plentiful supply of good water and ice; the rations good and well cooked, and were served by the battery cooks. The kitchens were neat and clean and the refuse put into barrels to be carted off.

The surgeons of the several batteries saw that everything pertaining to their part of the camp was kept in good sanitary condition, so that the health of the whole camp was excellent; four being the highest number off duty on any one day. Every thing about the camp was arranged for the convenience and pleasure of all.

In conclusion, I have only to suggest that the State supply each regiment with a medicine chest in which to keep the medical supplies, and also a case of surgical instruments.

I am, sir, very truly,

T. J. CRONISE,

Surgeon 1st Reg't Light Artillery, O. N. G.

COLUMBUS, O., August 30, 1887.

Col. Louis Smithnight, Commanding 1st Reg't Light Artillery, O. N. G., Cleveland, O.:

SIR: I have the honor to submit the following report as Quartermaster of the 1st Regiment Light Artillery during the encampment at Delaware, O., from August 10 to 15, 1887, inclusive:

RECEIPTS.

Cash received from State.....	\$2,104 00
“ “ “ subscriptions (Del.).....	200 00
“ “ sutler privilege.....	160 00
	<hr/>
	\$2,464 00

EXPENSES.

Horse hire	\$720 00
Forage for horses.....	255 00
Subsistence for batteries	841 14
Subsistence for headquarters.....	134 25
Floors for tents.....	200 00
Tent pins	11 40
Six days' labor during camp	9 00
Paid Hotel Donovan	4 50
Labor locating camp.....	11 00

Sprinkling can	1 25
Scales and scoop	8 50
Battery A, balance of subsistence	23 14
" C, " "	5 22
" D, " "	9 98
" E, " "	74 72
" F, " "	55 93
" B, overdrawn "	11 08
Amount due Battery G	13 67
Balance on hand	4 62
	<hr/>
	\$2,464 00

Respectfully submitted.

A. C. CAINE,
1st Lieutenant and Quartermaster 1st Reg't Lt. Art., O. N. G.

HEADQUARTERS OF THE ARMY, ADJUTANT-GENERAL'S OFFICE,
WASHINGTON, June 18, 1887.

SPECIAL ORDERS, }
No. 140. }

[Extract.]

* * * * *

3. By direction of the Acting Secretary of War the following named officers will visit the camps of the National Guard of Ohio during the annual encampments, commencing about the 1st proximo, and extending through the months of July and August, at such places as may be hereafter designated by the Governor of Ohio, for the purpose of inspecting the troops taking part in the encampments, under such instructions as they may receive from the Adjutant-General of the Army: 1st Lieut. Alfred C. Sharpe, 22d Infantry; 1st Lieut. Augustus P. Blocksom, 6th Cavalry. On the completion of each inspection they will rejoin their proper stations, if expedient. The travel enjoined is necessary for the public service.

4. By direction of the Acting Secretary of War, 2d Lieut. Elisha S. Benton, 3d Artillery, will visit the camp of the artillery regiment, National Guard of Ohio, during the period of its encampment at Delaware, Ohio, August 10 to 15, 1887, inclusive, for the purpose of inspecting that regiment, under such instructions as he may receive from the Adjutant-General of the Army, and on the completion of this duty will return to his proper station. The travel enjoined is necessary for the public service.

* * * * *

By command of Lieutenant-General Sheridan.

R. C. DRUM,
Adjutant-General.

Official: J. C. KELTON, Assistant-Adjutant General.

HEADQUARTERS OF THE ARMY, ADJUTANT-GENERAL'S OFFICE,
WASHINGTON, July 23, 1887.

SPECIAL ORDERS, }
No. 169. }

[Extract.]

* * * * *

16. By direction of the Secretary of War, Joseph T. Haskell, 23d Infantry, is detailed as one of the officers to visit the camps of the National Guard of Ohio,

under Special Orders, No. 140, June 18, 1887, from this office, *vice* 1st Lieutenant Augustus P. Blocksom, 6th Cavalry, relieved from the detail. Captain Haskell will attend at such of the encampments as are yet to be held, and, on the completion of each inspection, will rejoin his proper station, if expedient. The travel is necessary for the public service.

* * * * *

By command of Lieutenant-General Sheridan.

R. C. DRUM,
Adjutant-General.

Official: J. C. KELTON, *Assistant Adjutant General.*

HEADQUARTERS OF THE ARMY, ADJUTANT-GENERAL'S OFFICE,
WASHINGTON, *July 23, 1887.*

SPECIAL ORDERS, }
No. 169. }

[Extract.]

* * * * *

2. By direction of the Secretary of War, so much of paragraph 3, Special Orders, No. 140, June 18, 1887, from this office, as relates to 1st Lieut. Augustus P. Blocksom, 6th Cavalry, is revoked.

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By command of Lieutenant-General Sheridan.

R. C. DRUM,
Adjutant-General.

Official: J. C. KELTON, *Assistant Adjutant-General.*

[Telegram, 4448, A. C. P., 1887.]

HEADQUARTERS OF THE ARMY, ADJUTANT-GENERAL'S OFFICE,
WASHINGTON, *October 5, 1887.*

General H. A. Axline, care First Cleveland Troop, Chicago, Illinois:

General Terry has been telegraphed to have Lieutenant Scott, First Cavalry, inspect Cleveland Troop, if practicable.

(Signed)

J. C. KELTON,
Acting Adjutant-General.

Official copy, by mail.

O. D. GREENE,
Assistant-Adjutant-General.

FORT WAYNE, MICH, *August 11, 1887.*

The Adjutant-General, U. S. Army, Washington, D. C.:

SIR: I have the honor to report the following as the result of my observations of a visit to the camp of the 5th Regiment, Ohio National Guard, in compliance with Special Orders, Nos. 140 and 169, current series, from Headquarters of the Army:

I proceeded to Cleveland, Ohio, arriving there at 5:30 A. M., August 4, 1887.

The regiment had not yet left the city. I visited the armory and found prepara-

tions going on with a view of leaving on a special train for Coit's, a suburb of Cleveland, about seven miles distant. The six companies (A, B, D, F, G and H), headed by the band and drum corps, and under the command of Colonel F. H. Flick, marched to the depot of the Lake Shore Railway in good style, got aboard the train, and started five minutes after arrival. Arriving at Coit's Station, they marched to their camp, which was situated on the banks of Lake Erie.

Two men from each company had been detailed to report to the Quartermaster at Coit's, on August 2, 1887, for the purpose of pitching tents, so that the camp was laid out and ready for occupancy when the troops arrived. Guard details were made and sentinels posted at once. The balance of the afternoon was spent in putting the tents in shape for comfort. A flag-staff, sixty-five feet in height, was raised and the colors hoisted, at which time the camp was named "Camp Garretson."

On the 5th, routine laid out in general orders was strictly carried out. The men fell out to roll calls in nearly every company promptly and in their uniforms. The roll call was superintended by a commissioned officer, and he reported the result of the same to the Adjutant. The men were marched to their meals. Sick call, at 7 A. M., was attended by Surgeon F. H. Clark, who informed me that no case of a serious nature occurred during the encampment. A few of the men were overcome by the heat at drill; some few cases of fever and diarrhoea; otherwise the camp was an exceedingly healthy one. There was no hospital tent, and I saw no need of one.

At 7:30 A. M. the companies were out for company drill for one hour. The men were attentive and the officers well posted; they explained the movements, and corrected mistakes when they occurred.

At 8:30 A. M. guard mount took place. Adjutant Herman Mayer I found to be well acquainted with his duties, and the ceremony improved each day while in camp.

At 10 A. M. the regiment was turned out for battalion drill, lasting one hour and a half. The field in which the drill took place was too small, being only about one hundred yards square. Only three drills took place, but a decided improvement was noticeable in the drills that took place the second and third days, and I am satisfied that with more time the regiment would reach an excellent standard in battalion drill.

Going into camp in the afternoon the day is lost; Sunday in camp is virtually lost; and the day of muster and inspection, although it has its lesson, does not take the place altogether of drill. Again, the day that camp is broken is considerable of a loss, but with this regiment they had a good drill during the morning.

School call, at 1:30 P. M., was attended by all the non-commissioned officers. One of the captains, or a bright and well-posted lieutenant, took charge and, in addition to finding out what the men knew, explained to them such points in tactics as he deemed most essential.

At 2:30 P. M. skirmish drill took place by company. The movements, as far as I observed, were well executed. The men seemed to take considerable interest in the drill. The skirmish drill signals were taught to the men during the rest in one or more of the companies. Dress-parade formed quite an attraction in the camp, and was witnessed by large audiences from Cleveland each evening. The ceremony was very creditably executed the first time, and improved afterwards. The staff officers, including the Surgeon and Assistant Surgeon, turned out on each occasion.

At 7:30 P. M. school call for officers was sounded, and a full attendance gathered in front of the Colonel's tent each evening. At these occasions I talked freely to the officers, explaining to them the necessity of study and drill, of military discipline and courtesy, and my willingness to answer any question or give any information that might be of benefit to them. I was very much pleased to have some of them take advantage of my offer. I found one or two officers somewhat timid in regard to giving commands. To them I explained the necessity of overcoming this fault and

of learning to be independent, not waiting and relying on others to give the commands, and executing them after seeing some one else, giving them to understand that it would be better to make an occasional mistake or blunder in being self-reliant than to depend on some one else. I was gratified to see an improvement in this particular at the next battalion drill.

The officers of the regiment I found to be young men, bright and intelligent, who had not only been elected by the men, but who had been examined by a board of officers before being recommended to the Governor as qualified, and of good character, to fill these various positions. The enlisted men were bright, young fellows, who, I am satisfied, are good material for soldiers. They were quick in picking up information, and improved constantly in the performance of their duty while in camp.

Colonel F. H. Flick, commanding the regiment, is a soldier in looks and actions. A strict and just disciplinarian, he has the confidence of his men, all of whom, both officers and enlisted men, were prompt to carry out his orders.

The regimental staff I found to be very efficient.

Guard duty was very creditably performed; in fact, I think better than I have noticed in previous camps of State troops that I have visited. The enlisted men walked their posts in a soldierly manner. They repeated their orders when called on by those entitled to question them. Grand rounds were made every night. Sentinels seemed to understand their duties, and carried them out in a creditable manner.

The regiment was supplied with 120 tents, 9 by 9, belonging to the State. These tents, I understand, have been in use something like ten years, and appear now as good as new. This is owing to the excellent care taken of them. The are stored, when not in use, in the armory at Cleveland; are never put away unless perfectly clean and dry; all rents and other damages are repaired at the armory; and the tents are aired two or three times during the year. These tents are used by the line officers and enlisted men. The tents used by the field and staff belong to the officers. All the tents are floored. These floors are in sections, and are taken up and stored in the armory. They are the property of the regiment, as also are the tables, mess outfit, and furniture at regimental headquarters, and tables used by the company messes. Each company has its own mess outfit. The stoves and ranges used in camp are hired for the occasion.

Each man is paid forty cents per day for subsistence. Requisitions are made by the company commander on the Quartermaster for such articles of food as may be wanted, and he sees that they are supplied, keeping at the same time a regular credit and debit account with the company. Any credit that may be due the company over the total of forty cents per man is paid to the company commander, who takes it up as company saving. If the company has lived beyond its means (forty cents per day per man), then the shortage must be made up and paid over to the Quartermaster to settle the account. None of the companies seem to have been restricted in the articles and quantities required, and I was informed that the average of about \$25 per company was saved. The pay of each enlisted man while in camp is \$1 per day.

On Monday, the 8th of August, the command was mustered and inspected. Adjutant-General H. A. Axline was present and mustered each company after inspection. The troops were formed for review at 10 A. M. They presented a very fine appearance, and passed in review very creditably. Some of the commissioned officers failed to salute, and some who did salute failed to cast their eyes towards the reviewing officer. The marching was very good, with the exception of the time, which was about ninety per minute. The uniform was fatigue, and very much resembles that of the army; the material is very good. Uniforms in good condition, and with the exception of a few light-colored blue trousers in every company, except one,

presented a neat and soldierly appearance. The rifle used is the Springfield, caliber 45, and has been in the hands of the regiment for an average of ten years; condition good and serviceable. Most of the barrels were bright and clean on the inside, but the breech, chamber and lock had been overlooked. Six of the pieces had no firing pins. Three pieces had the firing pins rusted in the breech block so tightly that I could not move them—a very dangerous condition to have a rifle in. The knapsacks appeared new—were in good condition. The men handled them well in unslinging, opening and slinging.

I called attention at the time to all errors that I noticed, and found both officers and men willing and ready to receive instructions. The manual of arms was very good. An inspection of the quarters followed the inspection of troops. The streets were very clean; the tents were kept in good shape; blankets in most cases folded and piled up. Many of the tents had gun racks. One company had two-story bunks for four men. These bunks were very easily taken down and rolled up, and when in use only took one-third of the tent. They were made of hard wood, bottoms of canvas, and the men using them spoke very highly of them. They certainly add very much to the neat appearance of the tents. All the companies had campstools, which they carried to and from the mess-tents and their quarters. The mess-tents or shelters were all together, as were the kitchens—at one end of the camp. The tables were furnished with all the necessary furniture, and the food was plenty, both in quality and quantity, as well as being properly cooked. The garbage was collected in barrels and disposed of twice a day.

Altogether, I would say, that the regiment is in good condition for active service, if called upon, and I have no doubt would answer very promptly any call that might be made on them.

The average attendance during camp was 416, or about 85 per cent. of its strength.

Target practice during the year has taken place. The percentage of figure of merit has averaged 50.

The camp broke at 2 P. M. on the 9th, and the troops, greatly improved by the instructions received, paraded through the city of Cleveland.

Very respectfully,

Your obedient servant,

J. T. HASKELL,
Captain 23d Infantry.

FORT WAYNE, MICHIGAN, *September 14, 1887.*

To the Adjutant-General U. S. Army, Washington, D. C. :

SIR: I have the honor to report that in compliance with the instructions contained in Special Orders, No. 169, current series, Adjutant-General's office, I proceeded August 23, 1887, to the camp of the 8th Regiment, Ohio National Guard, at or near Galion, Ohio. I found on my arrival that all the companies were in camp, guards posted, and the camp routine, as laid out in General Orders, No. 9, current series, from Headquarters State of Ohio, being carried out. At dress-parade that evening, it being the first day in camp, the eight companies turned out very promptly, with three field officers and twenty-four line officers. The ceremony was gone through with very creditably.

At 7:30 P. M. school-call for officers was sounded. Colonel A. L. Conger was present and directed the officers to assemble in front of Lieutenant-Colonel G. R. Gyger's tent. I was introduced to the officers, and informed them of the authority under which I was present with them, the object and manner in which I proposed to

instruct them. I was very much pleased with the intelligence of the officers. I found, with few exceptions, that they were well posted in their duties. The meeting which ordinarily would have occupied a half hour, was prolonged an hour and a half, and at a subsequent meeting occupied three hours, most of the officers remaining and evidently very much interested.

On the 24th reveille was sounded on time, after which the camp was policed and tents put in order. At sick-call there were no cases, except simple complaints common to the first day's camp life. Drill-call at 7:30 A. M. All the companies turned out and executed company movements, including skirmish-drill. Guard mount at 9 o'clock. The details were a little slow the first day, but afterwards came into the line very promptly. This ceremony improved every day.

Lieutenant Colonel Gyger commanded at battalion drill. A thorough soldier, one who has seen hard service, he takes more interest than any officer I have met in many days. Not contented with doing well, I found him on all occasions studying to improve. His commands when given the first time were always prefaced with an explanation of how the movement was to be executed, and then the command was given in a tone that could be distinctly understood. Major C. V. Hard and Major E. F. Taggart both drilled the battalion at times under his supervision. I found each of the field officers, including Colonel Conger, very well posted in regard to battalion movements, and each and every time the battalion was turned out it improved. The men were quiet in ranks, gave their attention to the commands, and took an interest in trying to do their best. The afternoon drill was also in battalion movements, making three hours and a half battalion drill each day.

Major Hard was designated to take charge of the non-commissioned officers' school in the afternoon, but not only did he attend, but Colonel Conger, Lieutenant-Colonel Gyger, Major Taggart and several of the line officers. The non-commissioned officers turned out in full numbers, and showed by their questions and answers that they were well posted and willing to learn more of their duties.

Dress-parade was held each evening, Colonel Conger commanding. The companies turned out more promptly and came into the line in less time on each subsequent occasion. The attendance of officers and men was something to be proud of, there being so few absentees.

The camp at night was unusually quiet. No loud talking, singing, or other noise to disturb those who desired to sleep.

The companies were supplied with rations similar to the army rations, with the addition of fresh vegetables. The issues were made by the Quartermaster. The saving made goes into a regimental fund, which is expended under the supervision of the Colonel and a council of administration, composed of the Lieutenant-Colonel, Surgeon, and one Major. Although this may give satisfaction, I think a much better plan would be to let each company require for such articles of its own subsistence as they may desire, and the credit, if any there be, returned to them as a company fund.

The kitchens, mess furniture, tables and benches might be improved on without making them appear luxurious or expensive.

The camp was supplied with 108 wall-tents belonging to the State. Five tents, used by the field and staff, are rented by the regimental officers. The companies own their tables and mess furniture. Regimental headquarters own their mess furniture.

It took a couple of days to get the camp thoroughly policed, but when it was completed it was kept that way during the balance of the encampment, and reflected credit on the regiment. Surgeon A. C. Belden accompanied me quite frequently on my inspections made during the day of the camp, and looked carefully after the sanitary condition of the entire camp.

Water was brought into camp through pipes laid by the city water-works.

The walls of the tents were raised each morning, the bedding aired, and the

blankets folded and piled on the side of the tent. A very great difference was perceptible among some of the companies.

Company D, from Wooster, had two-story bunks sufficiently large to be occupied by four men. These bunks were made of hard wood, stained nicely, and gave the tent a neat and tidy appearance, that reflected considerable credit on the company. At the same time other companies had to come to camp without sufficient bedding to make them comfortable. Some did not bring bed-sacks, and one case I heard of where the man did not bring blankets because he was told to bring no baggage. Some of the tents had floors. I would recommend that all have floors. I am sure it is a saving in the health of the command, and better work can be got out of men when they are made comfortable.

I made my inspection of the regiment on the 27th of August. Major General H. A. Axline, Adjutant-General, was present and reviewed the troops.

They marched by in excellent style, handling their pieces very well. I found the uniforms (fatigue) only fair. The regiment has evidently not received its full share of new uniforms. The light-blue old-pattern uniform trousers do not look well along side of the new pattern, which is of a much darker shade. The guns (Springfield rifles, caliber 45) were in fair order, and with the exception of two with firing-pins fastened in breech block, were serviceable, although old, and had been in use a good many years—I should say not less than ten years. The tents, bedding, streets, kitchens, mess, shelters and general police of the camp during inspection was excellent. That afternoon the regiment paraded through the streets of Galion, and presented a very creditable appearance.

On Monday, the 29th, camp was broke, and companies returned to their stations, having spent one more day in camp than they received pay for.

I consider the regiment in good trim for active service, and have no doubt that under the command of its Colonel, who passed through the late war, and assisted by his Lieutenant-Colonel and two Majors, Adjutant Bartlett, who lost an arm in the service, and his most efficient Quartermaster, Lieutenant Taggart, all of whom were in the late war, that the regiment would promptly respond to any call that might be made by the General Government in case the emergency should arise, and do itself and the State credit. Eighty-five per cent. of the total strength of the regiment was present in camp.

Very respectfully,

Your obedient servant,

J. T. HASKELL,

Capt. 23d Infantry.

FORT WAYNE, MICH., *September 14, 1887.*

To the Adjutant-General, U. S. Army, Washington, D. C.:

SIR: I have the honor to report that, in pursuance to instructions contained in Special Orders, No. 169, current series, Adjutant-General's Office, I proceeded to the camp of the 16th Regiment, Ohio National Guard, near Port Clinton, Ohio, arriving there at 8 P. M., August 17, 1887. All the companies of the regiment arrived on the 17th, the afternoon being occupied in arranging for the comfort and convenience of the troops. It rained during the day and evening.

On the 18th the regular camp routine was carried out, commencing with assembly of trumpeters, a march played by the band, and then reveille. Sick call was attended by a few men who had colds or other light complaints, common to the first days in camp, but Major Arthur L. Osborn, Regimental Surgeon, assured me that no case of a serious nature occurred during the camp.

Company drill, at 7:30 A. M., was attended by all the companies, and the movements executed, as well as the perfection in drill, exhibited a knowledge of tactics that I hardly expected to see.

Guard mount, at 8:45 A. M., was at first a little awkward, but both officers and men were interested, and not only willing but anxious to learn, and to the extent of repeating movements that were not at first correctly gone through, so that before camp was broken they all became much better posted, and performed the duties pertaining to guard mount quite proficiently.

Battalion drill at 10 A. M., the companies responding promptly. At first there was slight delay in forming the line, too much time being taken up waiting for one company to be dressed before another would move toward the line. This was soon corrected, and the line formed in very short order. Colonel Keyes commanded the battalion during the drills, and showed a thorough knowledge of tactics, varying the movements at each drill. At first the men were a little clumsy, but they soon settled down to business, paid strict attention to the commands, and seemed to be quite interested. They drilled one hour and three-quarters in the morning and one hour in the afternoon. The drill ground was very long, and movements were not in any way restricted for want of room, giving a decided advantage to the regiment in this respect.

In the afternoon after an hour's battalion drill, the companies were drilled in skirmish drill, and, I believe, every company was found proficient in this drill. I saw the eight companies drilling at the same time, the drill ground being sufficiently large to admit of it.

Dress parade was held each evening, and an improvement made on each occasion.

At 1:30 P. M., non-commissioned officers' school was attended by all the non-commissioned officers, superintended by one of the Captains, who not only questioned the men as to their knowledge of their duties, but explained to them such points in tactics and the duties pertaining to the guard as seemed most essential.

At 7:30 P. M., the officers were assembled in front of the Colonel's tent, and I talked to them in a general way regarding the object of encampment, their duties, and why I had been ordered to attend; explaining to them that, while I remained among them I should be most happy to give them my assistance and answer all questions that they might see fit to ask. I found them well informed regarding their duties, anxious to learn, and willing to receive information.

Grand rounds were made during the night, and several of the officers accompanied me for instruction.

Colonel Charles M. Keyes, commanding the regiment, I found to be well informed regarding all his duties; not too strict in discipline, looking at all times after the welfare of his men, and very much interested in drill.

Lieutenant Colonel H. S. Bunker accompanied me on almost every occasion in my visits around the camp and in making the grand rounds at night. He was quite energetic in correcting mistakes made by sentinels, and in instructing men regarding the police of the camp, roll-calls and other essential points.

On the 18th and 19th a team of five men from each company had a shooting match of 10 rounds per man at 200 yards, using the "A" target. The competition was quite interesting. Major M. B. Lemmon had charge of the match, and conducted it in accordance with Blunt's instructions of rifle practice. The team of company B, having made the highest score, was made the custodian of a very handsome gold rifle badge, the property of the regiment, to be held by the Captain of the company until lost by the successful competition of some other company next year or later.

The police of the camp, which was called "Camp Phil Sheridan," was excellent in every respect. The tents were put in order, streets cleaned, and cook-houses and mess-tents policed inside and out every morning and at intervals during the day;

garbage carried off in barrels. Sinks were attended to and kept in order. Water for all purposes was hauled in wagons to the camp.

The camp was supplied with 108 wall-tents and 1 hospital tent, belonging to the State. The tents used by the regimental headquarters are owned by the regiment. The tents were all floored, the floors being the property of the regiment. The regimental headquarters own their mess furniture. The companies own their own mess furniture, but rent the stoves and ranges used in camp. The kitchens were frame, floored and roofed in; each company's mess-tents or shelter and kitchens were at the end of its line.

The companies are allowed to purchase their own subsistence, the bills being sent to the Quartermaster, who settles the same, and if any credit remains over the allowance of forty cents per day allowed by the State, the balance goes to the company fund, otherwise the deficit is made up by the companies. I found the food abundant, of excellent quality, and well cooked.

His Excellency, Governor Foraker, visited the camp on Saturday, the 20th. The troops were marched into Port Clinton that afternoon. They paraded through the streets and passed in review before the Governor, after which the ceremony of dress parade was gone through and the troops then marched back to camp.

On Sunday, the 21st, I inspected the regiment. Adjutant General H. A. Axline was present and received the review. The uniforms, which were fatigue, were in very fair condition. Rifles (Springfield, caliber, 45) were serviceable, with but few exceptions, where firing-pins were missing and broken; six had the firing-pins rusted or jammed into the breech-block so that they could not be moved, the point projecting, making it very dangerous and for the time useless, as in attempting to load the piece the cartridge is bound to be fired while closing the breech-block. The regiment did not turn out with knapsacks; all the men had them. The men made a very creditable appearance; marched excellently, handled their pieces well, and I believe would be ready at a few hours' notice for active service should they be called on in case of necessity.

About 80 per cent. of the entire strength of the regiment went into camp.

All of the companies have had target practice during the year.

The camp broke on the 22d of August, and was, in my opinion, one of great success as far as instruction and drill were concerned.

Very respectfully,

Your obedient servant,

J. T. HASKELL,
Capt. 23d Infantry.

WOOSTER, O., September 30, 1887.

The Adjutant-General U. S. Army, Washington, D. C.:

SIR: In compliance with paragraph 3, Special Orders, No. 140, current series, Headquarters of the Army, dated Adjutant-General's Office, Washington, June 18, 1887, and letters of instruction from the same authority, dated June 21, and August 19, 1887, I have the honor to submit the following report of my inspection of the troops and camps of the Ohio National Guard, from July 4 to September 11, 1887:

In compliance with instructions from the Governor of Ohio, I officially visited and inspected the following named organizations, encamped at places and dates opposite each:

First Infantry, Washington C. H., July 4-8; 2d Infantry, Findlay, August 10-15; 3d Infantry, Union City, August 17-22; 6th Infantry, Delaware, August 3-8; 9th Battalion Infantry, Wilmington, July 28 to August 2; 13th Infantry, Dayton, July

8-12; 14th Infantry, Lancaster, September 6-11, and 17th Infantry, New Lexington, August 23-28.

I also visited unofficially and merely for my own professional pleasure and profit, the 1st Artillery at Delaware, the 5th Infantry at Coit's, and the 8th Infantry at Galion. I thus had the benefit of close personal observation and comparison of all the troops in the State, except the 16th Infantry, which I was unable to reach before the end of its encampment. In every camp I was received with courtesy, and in those in which I was on duty I was furnished with a horse, quartered on the line of field and staff officers' tents, and provided with proper personal attendance. Every facility was afforded me for the performance of the duty with which I was charged. I was requested by both the Adjutant-General and the different regimental commanders to criticise and correct all violations of tactics, regulations, or customs of the service which might come under my observation. In nearly every camp, at the request of the commanding officer, I drilled the battalion once or twice, and conducted the daily schools for officers and non-commissioned officers. Each day I visited the kitchens, streets, and sinks in every camp; sometimes with the commanding officer, officer of the day, or surgeon; sometimes alone. I carefully examined sentinels both by day and night, observed roll-calls, and formations for drills and ceremonies, visited the guard tents, watched the issue of rations, and endeavored by every means thoroughly to acquaint myself with the *personnel* of the command and with the spirit and quality of the troops.

Near the close of each camp I made a formal inspection of the entire command, including arms, accoutrements, clothing, tents, bedding, messing, cooking, sinks, police, hospitals, supply department, administration, etc.

At the close of each day I carefully revised and completed my notes, not failing to record many impressions of professional interest which I had received—quite as valuable as any I may have imparted.

MOBILIZATION.

A general order, issued from the Adjutant-General's office, prescribed the times and places for each camp. The troops assembled at their armories at the appointed hour, and were transported to the various camp grounds by rail. The contracts for this transportation were made by the Adjutant-General, the regimental quartermaster being relieved of all responsibility in this direction. If practicable it would seem advisable to give these officers as much experience in this regard as possible, the transportation of troops and supplies being an important part of their duties in war. In some cases the camps were centrally located, in others at a considerable distance from the district furnishing the troops. This latter plan is the better, as it is wise to get the men as far beyond the reach of home influences, excursions, and picnic parties as possible. The time allowed for each encampment being so limited (six days) it should be the supreme object of the commander to employ every hour to the utmost advantage, and to put into effective practice that which can be acquired in armories only in theory. Arranged as the regiments now are, in compact geographical districts, it would be a long stride forward, if the troops could rendezvous by rail early in the day at a point six or eight miles from the camp ground, march to the designated place, and pitch their own tents. The necessary camp and garrison equipage should accompany the train and be handled and cared for by the troops themselves—a very important feature of the soldier's education. This plan was adopted by at least one organization (in another State, however), Company F, 3d Iowa Infantry, having marched thirty miles from its armory to camp. Experience is the only school in which the art of marching can be learned.

STRENGTH.

The consolidated morning reports for three days in each camp give the following exhibit :

Organization.	Present.			Absent.		Aggregate.
	For duty.	In confinement.	Sick.	With leave.	Without leave.	
First Regiment	323	5	10	40	73	451
Second Regiment.....	394	2	10	24	54	484
Third Regiment.....	398	1	6	23	17	445
Sixth Regiment.....	431	.....	7	45	20	503
Ninth Battalion.....	155	.....	1	15	22	193
Thirteenth Regiment.....	380	.....	10	53	32	475
Fourteenth Regiment.....	501	1	5	41	27	575
Seventeenth Regiment.....	474	.....	3	14	19	507
Total	3,056	.....	.....	.....	264	3,633

Seven companies (belonging one to the 2d, one to the 3d, two to the 14th, and three to the 17th Regiment) enjoyed the honorable distinction of having 100 per cent. of their enrolled strength in camp.

CAMPS.

The camps were all located near towns or cities, and as a consequence were thronged daily and nightly, too, with visitors, who strolled through company streets peered into tents, gathered in great crowds around the officers when assembled for school, and otherwise deprived the camps very much of their military appearance. Although but six days were allowed for each camp, the dates were so arranged in all cases as to include Sunday.

This was the great day for excursion trains, which came from every quarter, pouring thousands of visitors into the grounds, converting the camp into one vast picnic. Nothing can be more hurtful to the *morale* of a command, and the faithful work of five days may be largely undone by the relaxation and abandon incident to one of these gala Sundays.

The camps were generally well laid out, notably those of the 1st and 17th Regiments. The tendency seemed to be to pitch tents too much in the shade. Canvas should be exposed to the sun, and not placed under trees where the water may drip and keep the tent wet long after a storm has passed. Surgeons were seldom consulted in the selection of grounds or the location of latrines. It was a common practice to have the tents pitched a day or two in advance of the arrival of the troops. In some cases this work was done by hired (civilian) labor.

This practice is not military, especially in camps of instruction. The troops should pitch their own tents, and it would be an excellent drill to have them struck and pitched again several times during camp. The soldier cannot know his duties too well, and every hour should be turned to some good account.

The water-supply was not satisfactory in all cases, and only one camp (the Sixth Regiment) had proper bathing facilities. Personal cleanliness is a prime considera-

tion in maintaining the health of the soldier in camp, and where no stream is at hand a bath-house (or tent) should be provided.

POLICE.

As a rule the police of company quarters and streets was excellent. General police was not so satisfactory. Kitchens were more or less neglected, and garbage barrels not properly cared for. No disinfectant was provided for sinks, and in some cases they became very offensive. In the 13th and 17th Regiments officers and men used the same sinks, and in several camps the vaults were located outside the guard line, and accessible to throngs of visitors. In two or three camps in fair grounds sheds and cattle stalls were resorted to by the men, and soon became foul and noisome.

The surgeons generally exercised a close vigilance, discovering and reporting these disorders in advance to the officer of the day, but their warnings did not seem to receive the attention they deserved.

TENTS AND BEDDING.

Ohio owns wall tents only, of which she has 1,182. They are of good quality, well made, in good condition and serviceable. Nearly all of the tents were provided with pine floors, loaned for the occasion. Two regiments owned hospital and headquarters mess tents, purchased out of the regimental fund. With the exception of three companies all the troops I inspected were provided by the State with substantial single blankets. Several companies owned bed-sacks and a few had cots. Straw was furnished on the ground *gratis*. The beds were neatly piled or made up, but the bedding was not aired nor the tent floors raised during any of the encampments. This should be done by order once at least, if only as a matter of instruction.

ARMS.

The field and staff were not in all cases provided with the proper side-arms, but where each one is required to purchase his own saber, no just criticism can apply. In like manner the non-commissioned staff were frequently found without swords. The men are armed with Springfield rifle, caliber 45, nearly all of which have been cleaned, remodeled and furnished with new stocks within the past seven years. With the exception of one company in the 6th Regiment, they may be pronounced serviceable; and in the larger number of companies I found them clean and well cared for. One company in the 13th Regiment had every gun in perfect condition, while others in the same command were discovered to be in a state of criminal neglect. It may be impracticable in some cases to require the men to care each for his own gun; it is, nevertheless, a most important part of the soldier's education, and should not be wholly neglected. The soldier should be familiar with its construction, and be made to realize the importance of keeping it free from rust, sand and rude shocks. This he can best learn by being required to clean it himself.

ACCOUTREMENTS.

Canteens, knapsacks, haversacks—all of late pattern—and the McKeever cartridge-box are furnished to nearly all the troops in Ohio. One or two regiments failed to bring their canteens and haversacks to camp, and, indeed, there seemed to be a disposition to underestimate this part of the equipment. The equipments were in good serviceable condition, but not in all cases as clean as could be desired. The brass parts should be polished bright and the leather blackened. This will add immeasurably to the neat appearance of a command, and should certainly be a requirement for inspections. I was gratified to observe that one company in the Thirteenth

Regiment had the brass parts exceptionally clean, and in the entire Fourteenth Regiment they were quite generally so.

CLOTHING.

The fatigue uniform (the only one furnished by the State) is identical in pattern and color with that of the Army. Three regiments have provided themselves, at their own expense, with dress uniforms. I saw but one—that of the 1st Regiment—which is similar to that of the Army. The clothing is of good quality, neat-fitting and well made. Overcoats, similar to the U. S. Army pattern, are also issued, and all save one company are so provided. The buttons on blouses, caps and great-coats are stamped with the coat of arms of the State.

MESSING.

As a rule field and staff officers messed together—the 1st, 6th, 9th and 17th Regiments under canvas. I was informed that others had dining tents, but preferred to use the buildings available. The non-commissioned staff messed with the commanding officer and staff in all except the 1st and 3d Regiments. Line officers generally messed with their men. The exceptions I noted to this were the entire 1st Regiment, and one or two companies each in the 3d, 14th and 17 Regiments. In all regiments messing was conducted by companies—non-commissioned officers and privates together. All company messes were under canvas, except the 13th Regiment, where the whole command was indoors. Nearly all companies are provided with serviceable mess-chests, some of which displayed considerable ingenuity in their construction and arrangement. They were generally found to be clean and sweet, but not always so. Each company is provided with serviceable mess furniture for the field, and a few have substantial iron cranes for cook fires.

Cooking was done over camp-fires and stoves, the latter being rented for the occasion, and protected by temporary shanties. In the larger number of cases cooking was done by hired (civilian) cooks.

In the interest of discipline, officers should have their mess separate from the men, and this is far more necessary in the National Guard than in the Army. The familiarity of the mess-table is utterly incompatible with the requirements of true subordination.

RATIONS.

The food was good and sufficient, except the bread, which was too fresh. Beef, pork, and one or two vegetables, with coffee, bread, and other elements of Army rations, were issued. Each officer and man was allowed forty cents per day for subsistence. In two camps the companies were allowed to open an account with a grocer and make their own purchases. In these regiments the surgeons informed me that the sickness was largely due to overeating.

INSTRUCTION.

Schools. By a general order from the Adjutant-General's office two schools—one for officers and one for non-commissioned officers—were appointed to be held daily in each camp. With one or two exceptions, these schools were well attended and kept up till the close of the camp. Great interest was manifested, and all seemed anxious to learn.

Drills. The "setting up" exercises had evidently been neglected. Men hung their heads too much and cast their eyes to the ground near their feet, but many were recruits, and as well drilled as could be expected. I saw many companies, however, which executed the manual of arms beautifully, and yet marred it all by standing with heels apart, or by raising hands or turning their heads. The school

of the company was better, but, strange to say, did not equal in proficiency the school of the battalion.

Rifle Practice. No target practice was had in any camp, owing to lack of time or sufficient range.

CEREMONIES.

These were well performed. The manual of the sword had apparently been neglected, and 1st Sergeants did not at first report their companies correctly, but the Adjutants were zealous and painstaking, and the progress of instruction from day to day was very marked. The neglect of the school of the soldier was apparent in some regiments, where the men were restless and inattentive, raising their hands in ranks and turning their heads, and some were even seen to spit.

GUARD DUTY.

Very few men had been instructed in this important duty before coming to camp. Guard mounting would be performed with such evident understanding that it was surprising to find such a misconception of its meaning, and of the grave responsibilities for which it is merely the preparation. Men who belonged to beautifully drilled companies, and whose bearing in ranks was soldierly and self-confident, seemed to feel ill at ease, awkward, and apparently unconscious of their dignity and authority as sentinels. Very few saluted correctly, many failed to recognize officers at all, some halted, sat down and conversed with the next post. I noticed quite a number marched to their posts at quick time, halting at the end, coming to a carry, facing about, resuming the right shoulder and the march. I also saw sentinels challenging at 10 o'clock in the morning, and others rendering salutes after retreat.

ADMINISTRATION.

Each regiment and company is required to keep the books and official records commonly in use. These are not furnished by the State, however, and very few organizations have provided themselves with complete sets as prescribed. The papers which were submitted for inspection were generally neat and correctly made up, those of the 1st, 2d and 14th Regiments deserving special mention.

Quarterly returns of men and property are rendered by regiments and by companies, troops and batteries.

CONCLUSION.

Upon the whole I am prepared to pronounce the National Guard of Ohio a splendid body of men, deserving the respect, support and cordial co-operation of all good citizens of the State.

In conclusion, I desire to make my acknowledgments to the regimental commanders and other officers, for courtesies received, and to extend my thanks to the War Department for the great professional benefit I have derived from the performance of the duty assigned me.

I have the honor to be, very respectfully,
Your obedient servant,

ALFRED C. SHARPE,
1st Lieutenant 22d Infantry.

NEWPORT BARRACKS, NEWPORT, KY., August 20, 1887.

The Adjutant-General, U. S. Army, Washington, D. C.:

SIR: In compliance with paragraph 4, Special Orders, No. 140, Headquarters of the Army, Adjutant-General's Office, Washington, June 18, 1887, I have the honor

to make the following report of the inspection of the camp of the Artillery Regiment, National Guard of Ohio, during the period of its encampment at Delaware, Ohio, from August 10th to 15th, inclusive.

I reached the city of Delaware, and reported to the Adjutant-General of the State, Major General H. A. Axline, at the Hotel Donavin, Tuesday evening, August 9th, and early next morning reported at the camp to Colonel Louis Smithnight, of the 1st Regiment of Artillery, Ohio National Guard.

ORGANIZATION.

Under orders issued May 6th, 1886, all the artillery organizations in the State, consisting of eight four-gun batteries, numbered from one to eight, inclusive, were consolidated into a regiment, designated as the 1st Regiment of Light Artillery, Ohio National Guard, and the designation of the different batteries in the regiment changed from the numbers to the letters numerically corresponding thereto.

The following are the field and staff officers of the regiment :

Louis Smithnight, of Cleveland, Colonel ; George Sintz, of Springfield, Lieutenant Colonel ; Edward C. Brush, of Zanesville, Major ; Edward O. Dana, of Cincinnati, Major ; H. M. Clewell, of Cleveland, Adjutant ; Alex. C. Caine, of Columbus, Quartermaster ; Thomas J. Cronise, of Toledo, Surgeon ; B. B. Brashears, Assistant Surgeon ; L. B. Moore, Chaplain.

Each battery has a Captain, one first and two second Lieutenants ; an Assistant Surgeon, with rank of Captain ; one first, one Quartermaster, one veterinary, and four line Sergeants ; eight Corporals ; and from 40 to 60 privates. The band are also enlisted men, and are very fine musicians.

The following is a consolidated morning report of the camp :

Organization.	Present.		Absent.		Total present and absent.		Aggregate.
	Officers.	Men.	Officers.	Men.	Officers.	Men.	
Field and Staff	6	.....	2	.....	8	.....	8
Band.....	.....	23	.....	.....	.....	23	23
Company A	3	59	.....	3	.....	62	65
Company B	4	37	.....	9	4	41	50
Company C	5	41	.....	8	5	46	54
Company D	4	37	.....	18	4	41	59
Company E	5	57	.....	7	4	62	69
Company F	2	47	.....	8	2	55	57
Company G	4	63	.....	15	4	78	82
Company H	4	52	.....	7	4	59	63
Total.....	37	416	2	75	39	467	530

EQUIPMENT.

The armament of the batteries is as follows: Battery A, of Cleveland, four 3-inch rifles; Battery B, of Cincinnati, four gatling guns, caliber 45, model of 1883, Accle's positive feed-drums; Battery C, of Zanesville, two 3-inch rifles and two gatling guns, caliber 45, model of 1883, Accle's positive feed-drums; Battery D, of Toledo, two 3-inch rifles and two gatling guns, caliber 45, model of 1883, Accle's positive feed-drums; Battery E, of Springfield, two 3-inch rifles and two gatling guns, caliber 45, model of 1883, Accle's positive feed-drums; Battery F, of Akron, two 3-inch rifles and two 6-pounder bronze guns; Battery G, of Marietta, four 12-pounder Napoleon guns; Battery H, of Columbus, four 6-pounder bronze guns.

There are no traveling forges or battery wagons in the regiment, but each of the pieces is supplied with a good limber and caisson.

The harness is old, but most of it entirely serviceable, and each battery has enough to harness up if necessary.

Each of the gatling guns is fully supplied with all the necessary tools, and in their proper chests, but the 3-inch rifles need many implements and equipments, having usually only the lanyard-priming wire and thumb-stall.

All the pieces and limbers are in good sound condition, with the exception of three carriages of Battery A, which were somewhat injured at target practice.

The men are armed with sabers, but they have no haversaks, knapsacks or canteens.

The State owns no horses for this regiment.

THE CAMP.

The camp was about a mile and a half from the city of Delaware, on the line of the Cleveland, Columbus, Cincinnati and Indianapolis Railroad, and near a small lake.

The park was established as a basis for the camp, 32 pieces in line, at 14 yards interval, making a line 498 yards long. The battery streets were perpendicular to this, with a width of 56 yards, the center one being 112 yards.

Then came headquarters parallel to the park. There were four mess-tents on each of the flanks. This made the camp too extended, and calls could not be heard through the camp and sometimes, failing to be transmitted, caused a slight confusion.

I would suggest a future arrangement by which the camp is closer, establishing some other basis than the park.

The drainage was good, location healthy, and the ground readily absorbed moisture, so that we were not troubled with mud. The water in the vicinity was too hard; water was brought to camp in a wagon constructed for the purpose and distributed.

There is sufficient tentage to comfortably shelter the men, but some of the batteries should have had more for absolute comfort, being too crowded. The tents are wall-tents and in good condition. I noticed many tents put up without flies, and upon questioning found that some of the tents had none. I saw many flies about camp, however, used for other purposes, and presumably all could be found.

Each tent should have its proper fly, and when put up the fly should be placed in its proper place. In many cases they were placed in front of the tent for shade, giving a ragged appearance to the line. The police of the camp was excellent.

MEDICAL DEPARTMENT.

The medical department, as such, has no property. There are no hospital tents or supplies to be drawn.

The surgeon is authorized to buy such stores as he thinks necessary before coming into camp or in active service, but no provision is made for their care and

preservation in camp; he is not provided with a medicine chest or pannier. The stores remaining are kept until next year. The surgeon must furnish his own instruments, the State providing none. This department should have a more complete system of record books, etc. The sanitary condition of camp was excellent, the rations ample and well cooked, and there were no complaints concerning food during camp. No serious cases of sickness occurred during camp.

QUARTERMASTER'S DEPARTMENT.

The Adjutant-General of the State is, during peace, also the Quartermaster-General, and direct from his office come all contracts for transportation, etc. The Regimental Quartermaster is also commissary of subsistence, and buys his stores in market at lowest attainable rates without competition. The State allows forty cents a day for rations, and by this means the men could be placed in the field any time and easily supplied and rationed.

RECORD BOOKS.

An order book and a roster of the regiment were the only books at headquarters, and these were not supplied by the State. There should be a consolidated morning report book, as the separate blanks are liable to be lost or misplaced; a book of letters sent, letters received, etc. In some of the various batteries the records are very nicely and accurately kept, but in many they are somewhat neglected. At the guard tents there should also be a guard book, the report being now made on separate blanks.

MESS ARRANGEMENTS.

Each battery had a mess tent and kitchen. The band mess with Battery A. The cooking was done in some cases by enlisted men and in some by hired cooks. The mess furniture was usually tin plates and cups, and in some cases oil-cloth tablecloths were spread on the tables. The tables and mess tents were kept neatly and nicely, and the kitchens were neat and orderly. The meals consisted of rice, beans, potatoes, corn, cabbage and other vegetables; fresh beef, mutton, pork, corned beef, and salt pork or bacon; bread and butter and coffee. Each battery had a separate bill from the Quartermaster's allowance, and in some cases the meals were quite elaborate.

The rations were drawn in the morning and kept in the Quartermaster Sergeant's tent, near each kitchen. Everything was neat about them.

TACTICAL INSTRUCTION.

The drills were generally the standing gun drill, and all of the batteries were quite good at it. The drill of Battery A, of Cleveland, is perfection. Much time and care has been given to this drill. It was a pleasure to witness to what a state this drill could be brought. The men are all thoroughly conversant with the names of the various implements and equipments, parts of gun-carriage, limber, etc.

The same could be said of Battery B, of Cincinnati, in regard to the gatling gun drill, the men dismounting and assembling the gun readily. Much credit is due these two batteries for the patient attention paid to details.

All of the batteries were visited at various times, Battery E being the only one which drilled mounted, and I a well-drilled battery. Distances were kept well, dressing fair, officers and guidon always at their proper posts, and could be placed in active service at any time.

Battery C, of Zanesville, drills quite well for the length of time they have been in the service.

I did not get an opportunity to see Battery H at drill; upon riding through the

street at drill-call I found only one private, and he knew nothing about drill-call or anything else. More attention should be paid to duty in this battery.

The saber belts were, many of them, worn too long, and hung very loosely about the waist; the men should pay more attention to blackening them and polishing them. Every battery executes "return saber" wrong. At the command "return saber," the sabers are placed in the scabbard about six inches instead of being held at a "present." This should be corrected, and a uniform method adopted through the regiment. Many also neglect to unhook sabers when drawing or returning saber.

In many of the details of drilling the men were negligent. In asking one of the men at a gatling gun to aim at a tree about 600 yards away, so as to hit it about three feet above the ground, he neglected to raise the sight to the 600 yards. The men should be instructed in all the details of camp life before coming to camp, but it was very pleasing to see how easily they were acquired.

The parades and reviews were very good, exceptionally so, due to the careful management of the Adjutant. During the first parade the intervals were not good, and there was considerable unnecessary raising of hands in ranks; but one caution at the school corrected all this, and after the first evening there was very little.

Many of the commissioned officers are somewhat deficient in the general military knowledge requisite to a full comprehension of their duties. They should each and every one become conversant with tactics, not only just that part they are accustomed to drill by, but with the subject in general; study military law and customs of the service, and remember that they can become good, thorough officers only by hard and patient study. The respect of the men can only be gained by those officers who show themselves to be acquainted with their duties, and punctual and exact in their performance.

At reviews the dress was very good, but the distances not accurately kept. Many of the sergeants saluted the reviewing officer, and some of the commissioned officers failed to do so. The parade and review for Governor J. B. Foraker, Friday evening, was very good.

GUARD DUTY.

As only two of the batteries at this camp were mounted, and there was no infantry, it was thought best to have a general guard mounting of the infantry form. It would be very unjust to criticise this, because it was entirely new and unexpected, but after the first morning they succeeded very well, and Sunday morning the mistakes were very few, and individual ones. The officers of the guard were not thoroughly conversant with their duties, nor were the sentinels, although a pamphlet of instruction had been issued by the Adjutant-General of the State before going into camp; but even though they were not thoroughly enough instructed as to duties and forms of saluting, the desire to do everything right was very evident; they were always soldierly and courteous on post, and presented a fine appearance, being neat and clean. Although the manner might be criticised, they always saluted, and I heard of no one passing unchallenged. The officers should move more carefully, instruct the men in this important duty; upon them depends the safety of a camp or position, and they should rigidly enforce all orders given them. Although the guard detail was made with the intention of leaving each battery enough men to drill, they were sometimes disabled by this and other details. I would suggest to future encampments enough infantry to guard the encampment, or have each battery as a whole detail for guard.

TARGET PRACTICE.

Targets were erected across the railroad from camp; they were placed against hay-stacks, the one for 3-inch rifle being 1,033 yards distant, and for gatling guns about 350 yards.

The large targets were 12 by 12, and divided into squares of one foot by horizontal and vertical lines and numbered. The firing commenced Thursday, and continued morning and evening the rest of the week.

The shot was all Eureka solid shot, and considering the distance, and the fact that almost every shot was fired by a new man, I consider the record extremely creditable to them. Battery A has the best record. The records of all the batteries were carefully kept.

In this connection I will speak of the sights used; they were all pendulum hausse sights, made by Corporal W. C. Frazee, of Battery A, who is a skillful mechanic. They were narrow above, to prevent vibration on account of the wind, and the front sight has a protecting and shading cylinder permanently attached to it. They were very accurate. Friday afternoon Captain Hopkins put 267 shot out of 300 into a small target at 350 yards with a gatling gun. Saturday afternoon 22 skirmish figures, in all positions, were fired at 350 yards, and a contest took place. Battery B, of Cincinnati, took the prize, hitting 11 of the figures out of 100 shots.

INSPECTION.

Sunday, although somewhat rainy, I inspected the entire command. The guard was inspected first, and presented a very creditable appearance. The band was next inspected, and the men were all neat, clean, hair cut, clothes brushed, shoes polished, and instruments bright.

Battery D, on the right, was then inspected at the pieces. Many of the men were recruits and not thoroughly conversant with their duties or the names of implements, parts of gun carriage, etc., but all of the men enlisted for any length of time were well drilled. The police of the park was not good; chief of sections did not execute inspection saber; harness all on racks properly, but not oiled or blackened, and had not been for a long time. At formation in battery street the formation was infantry, not artillery; sabers and scabbards rusty; belts not properly cared for; uniforms carefully brushed, with one exception; policing of battery street and parade poor, and order concerning bed-sacks not complied with, the loose straw being somewhat scattered.

Battery B was then inspected at the pieces; men all at proper posts; guns in good order, polished and ready for service; tools in proper place. This battery took the first prize at Washington, D. C., for gatling gun drill. The harness all upon racks in proper order, well oiled, pliable and black, and valises packed.

This is exactly the same harness as that issued to the rest of the regiment, and is an example of what can be done with it. This is a very good battery. At inspection in battery street, formation correct; sabers and scabbards bright; belts in excellent condition; tents all carefully looped up and well policed.

Battery C was then inspected at pieces; chief section posted wrong and did not execute "inspection saber;" gunners conversant with duties, parts of gun, etc.; harness well arranged but not blackened or oiled. At inspection, in battery street, sabers and scabbards bright, with few exceptions; clothes brushed; hair short; uniform old but serviceable; tents well arranged and police generally good.

Battery G was then inspected; inspection well conducted; battery properly formed; the guns were not very bright, muzzles dirty, and bore discolored; the men knew the names of the parts of the pieces and carriage very generally; harness on racks properly but not blacked or oiled, some straps missing, but the sets could very easily be completed. In battery street men neat and clean; uniform old and some of it scarcely serviceable—but neatly brushed; battery properly formed; tents well policed. Many little details of dress neglected, collars unhooked, and buttons and some cap ornaments missing.

Battery H was then inspected at pieces; battery well formed; overcoats not hooked at collar; sabers not drawn; pieces not well cared for; harness not oiled or

blackened. In battery street, men not erect or soldierly, sabers not polished, straps not blackened, some caps without numbers or ornaments, and blouses not hooked ; many had a red braid around collar not uniform ; some of the uniform scarcely serviceable, some not brushed. General police of tents good, but not all provided with bed-sacks.

Battery A was then inspected ; battery well formed ; dressed all at proper posts ; guns polished, muzzies and bore clean, and carriages newly painted. This battery presented a fine appearance at inspection, being picked men, well uniformed, neat, and soldierly, and drilling to perfection. Men well acquainted with parts of piece and carriage. In battery parade ground, sabers and scabbards polished, nickel-plated, straps black. Harness neatly arranged and well oiled and blackened ; tents carefully arranged, well policed ; uniform carefully arranged on bed or ung in regular order on pegs. It was a pleasure to inspect them. The guns should be painted or blued.

Battery E was then inspected ; this was the only battery mounted when inspected ; formation good ; all at proper posts ; harness carefully and properly adjusted, except collars, which could only be fixed by hiring horses with collars and harness ; harness not carefully oiled or blackened ; police good ; tents carefully arranged ; sabers bright and straps fairly good.

Battery F was then inspected and found in very good condition ; harness not well oiled or blackened ; one disabled wheel should have been replaced by spare wheel before inspection ; sabers fairly well polished ; tents well polished and arranged.

The inspection concluded with mess-tents, store-rooms, sinks, etc. Everything in good condition.

The inspector was accompanied during this long inspection by the Adjutant-General, Assistant Adjutant-General Colonel Meade of the Governor's staff, and by the field and staff of the regiment, and during inspection of mess-tents and kitchen by Surgeon Cronise.

CLOTHING.

The uniform adopted is the U. S. Regulation for artillery, but the button is the State button. If new this is very serviceable, but generally not well fitting ; much of it has been in the service too long. I would suggest that blouses and trousers be issued unmade, and an allowance be made for fitting them to the men, or that more careful issues be made. The Captains should measure each man before making requisitions. If a man has a neat and well fitting uniform his pride in his personal appearance and thereby in his organization is greatly increased.

COLORS.

The regiment was presented with a beautiful stand of colors by Captain E. G. Donaldson, of Battery H, and Colonel Smithnight, in accepting them on behalf of the regiment, made a speech which should be remembered by every one in the regiment while marching under them.

TACTICS.

Captain Hopkins, of Toledo, prepared a system of tactics applicable to the improved gatling gun, which I heard read and discussed at a meeting of the board appointed for the purpose, and I consider it a very good system, and recommend its adoption as a standard throughout the United States.

GENERAL REMARKS.

The inspector held each day at 1:30 P. M., a school for the non-commissioned officers, and in the evening one for the commissioned officers. They were atten

tive and seemed to learn much. The non-commissioned officers were marched up in squares and reported promptly, while it was almost impossible to get the commissioned officers together, who should be more prompt, and not allow their men to set them the example.

The instructions were the general courtesies and customs of service.

After, the first school salutes were more promptly given and all those little details of courtesy better attended to. These schools should be held at the armories during the year and improvement will become apparent at once; many men learn by listening when they fail to learn or teach themselves in other ways.

Discipline of the troops was excellent, and each tried to do his duty promptly and to his best understanding, and at the close of camp soldiers would stand at attention, put on or button up their blouses at the approach of the inspector, the officers reporting result of roll-calls at tattoo and reveille, while when camp commenced they neglected this, although an order to that effect had been published. There seemed to be a marked military courtesy, which extended through the entire regiment. There was a prompt and cheerful obedience to orders and a self-respecting and prompt response to the requirements of military courtesy, and that deference which indicates consideration for the feelings and respect for each other.

By such a spirit as this the regiment cannot fail to be brought to the highest state of efficiency. To this general rule there were, of course, a few exceptions, but it is hoped that those will either follow the example set them or leave the regiment. The standard of this regiment is very high; all are men of intelligence and fair education.

There were no cases of intoxication noted, although there was plenty of manly sport and pleasant frolic after the fatiguing duties of the day. Their conduct and bearing throughout are deserving of the highest commendation; they all seemed to realize that they had come for the purpose of military instruction and discipline, and, although many of them had this as their only summer vacation, they did their duty cheerfully and prompted by the desire to perfect themselves in all the attainments of true soldiers.

For the brief time of camp, practically four days, and the disadvantages under which they labored, I consider the results attained as extremely creditable to them, and their conduct and bearing as extremely creditable to their State.

Other than the recommendations which I have made, I will only say that they should be more military and strict in their armories during the year—be soldiers at all times. From what I saw during this encampment, the benefits derived from my instruction, and the progress made even during this short time, I think that the value to this and other States by a permanent detail of a regular officer of the Army, attached to the Governor's staff as instructor and inspector, would be almost incalculable.

It is impossible to do very much during the encampments, but, working all the time, the progress would be rapid.

In conclusion, I desire to thank the Adjutant-General and all the officers of the regiment, particularly Colonel Smithnight, for the many courtesies extended to me during my visit to camp, which made it very pleasant for me.

Very respectfully,

Your obedient servant,

E. L. BENTON,

2d Lieutenant, 3d Artillery.

FORT LEAVENWORTH, KANSAS, *October 25, 1887.*

The Adjutant-General, U. S. Army, Washington, D. C.:

SIR: In compliance with instructions contained in the enclosed letter from Headquarters, Division of the Missouri, dated October 6, 1887, directing me to make inspection of the First Cleveland Troop of Cavalry, I have the honor to submit the following report:

I made the inspection on October 8th. The strength of the troop was as follows:

Commissioned officers (3), three.

Enlisted men, (35), thirty-five.

Horses (34), thirty-four.

The equipment consisted of—

30 Sharp's carbines.

50 carbine slings.

50 cartridge belts.

30 cartridge boxes.

50 carbine boots.

50 Colt's revolvers.

50 cavalry sabers.

38 dress uniforms.

38 fatigue uniforms.

100 blankets.

38 sets horse equipments.

CARBINES.

The carbines were in good condition, as regards cleanliness, but they are old and out of date, and should be replaced by the Springfield carbine.

PISTOLS.

The pistols are clean and in good condition.

SADDLES.

The saddles were clean and neatly polished, but some are old and need to be replaced.

GIRTHS AND BRIDLES.

The girths are old, some of them unserviceable and unsafe. The same is true of the bridles. All other equipments are in good condition and apparently well cared for.

UNIFORMS.

The uniforms, both dress and fatigue, are stylish in appearance, and are neat, well-fitting and serviceable.

BOOTS AND SPURS.

The boots and spurs are neat, stylish and durable for such service as the troop will probably be called upon to perform.

HORSES.

The horses were generally well-sized, well kept, serviceable, and generally steady in ranks. The gaits of some of them were better suited to the saddle than to the service horse.

DRILL AND DISCIPLINE.

As regards the drill and discipline of the troop, too much praise cannot be bestowed upon them.

The officers were familiar with the tactics, and gave the commands in a manner that showed frequent drills and a familiarity with their duties.

The men in the ranks were attentive, and the commands were executed promptly without hesitation and with precision. This applies to the drill, both at the walk and at the increased gaits.

I thoroughly tested the troop in drill of more than an hour.

I suggest a little more attention to drill in the manual of the saber.

The camp equipage did not belong to the troop.

The camp was neatly kept, and general good order and discipline seemed to prevail.

Very respectfully,

Your obedient servant,

(Signed)

W. S. Scott,

2d Lieutenant, 1st Cavalry.

STATEMENT SHOWING ATTENDANCE AT ANNUAL ENCAMPMENTS FOR THE YEAR 1887.

FIRST REGIMENT OF INFANTRY.

Encamped at Washington C. H., July 4-9.

Organization.	Location.	Present.			Absent.			Strength of organization.	Per cent. of attendance.
		Officers.	Enlisted men.	Aggregate.	Officers.	Enlisted men.	Aggregate.		
Field, Staff and Band.....	Cincinnati	8	26	34	1	2	3	37	92
Company A.....	"	2	38	40	.....	6	6	46	87
" B.....	"	3	28	31	.....	6	6	37	84
" C.....	"	2	34	36	.....	4	4	40	90
" D.....	"	2	34	36	1	17	18	54	66
" E.....	Hamilton	2	39	41	1	7	8	49	84
" F.....	Cincinnati	1	36	37	.....	6	6	43	86
" H.....	"	3	48	51	.....	25	25	76	67
" I.....	"	2	40	42	1	6	7	49	89
Total .....	.....	25	323	348	4	79	83	431	85

SECOND REGIMENT OF INFANTRY.

Encamped at Findlay, August 10-15.

Organization.	Location.	Present.			Absent.			Strength of organiza- tion.	Per cent. of attend- ance.
		Officers.	Enlisted men.	Aggregate.	Officers.	Enlisted men.	Aggregate.		
Field, Staff and Band.....	Kenton.....	7	26	33	1	3	4	37	90
Company A.....	Findlay	3	44	47	.....	4	4	51	92
“ B.....	Upper Sandusky.....	3	27	30	.....	7	7	37	81
“ C.....	Lima	2	32	34	.....	10	11	45	79
“ D.....	Van Wert	3	41	44	.....	3	3	47	93
“ E.....	Kenton.....	3	34	37	.....	16	16	53	70
“ G.....	Kenton.....	3	37	40	.....	11	11	51	80
“ H.....	Bloomdale	3	63	66	.....	2	2	68	99
“ I.....	Ottawa	3	32	35	.....	15	15	50	70
“ K.....	Celina.....	3	41	44	.....	3	3	47	94
Total .....	.....	33	377	410	2	74	76	486	84

THIRD REGIMENT OF INFANTRY.

Encamped at Union City, August 17-22.

Organization.	Location.	Present.			Absent.			Strength of organiza- tion.	Per cent. of attend- ance.
		Officers.	Enlisted men.	Aggregate.	Officers.	Enlisted men.	Aggregate.		
Field, Staff and Band.....	Covington.....	8	30	38	.....	.....	.....	38	100
Company A.....	“	3	47	50	.....	4	4	54	93
“ B.....	Urbana.....	3	36	39	.....	7	7	46	85
“ C.....	Greenville	3	38	41	.....	4	4	45	91
“ D.....	Sidney	3	50	53	.....	8	8	61	87
“ E.....	Troy.....	2	49	51	.....	10	10	61	84
“ F.....	Piqua	3	50	53	.....	3	3	56	95
“ G.....	Gettysburg	3	42	45	.....	.....	.....	45	100
“ H.....	Bellefontaine	3	30	33	.....	1	1	34	97
Total .....	.....	31	372	403	.....	37	37	440	91

FIFTH REGIMENT OF INFANTRY.

Encamped at Coit's, August 4-9.

Organization.	Location.	Present.			Absent.			Strength of organiza- tion.	Per cent. of attend- ance.
		Officers.	Enlisted men.	Aggregate.	Officers.	Enlisted men.	Aggregate.		
Field, Staff and Band.....	Cleveland	6	32	38	1	1	2	40	96
Company A.....	"	3	59	62	.....	1	1	63	98
" B.....	"	3	43	46	.....	8	8	54	85
" C.....	Burton	3	45	48	.....	4	4	52	92
" D.....	Berea.....	3	36	39	.....	11	11	50	84
" E.....	Geneva.....	3	48	51	.....	9	9	60	81
" F.....	Cleveland	3	49	52	.....	9	9	61	85
" G.....	Norwalk.....	3	58	61	.....	4	4	65	94
" H.....	Youngstown	3	39	42	.....	4	4	46	91
Total .....	.....	30	409	439	1	51	52	491	88

SIXTH REGIMENT OF INFANTRY.

Encamped at Delaware, August 3-8.

Organization.	Location.	Present.			Absent.			Strength of organiza- tion.	Per cent. of attend- ance.
		Officers.	Enlisted men.	Aggregate.	Officers.	Enlisted men.	Aggregate.		
Field, Staff and Band.....	Chillicothe.....	8	19	27	1	6	7	34	79
Company A.....	"	3	30	33	.....	22	22	55	60
" B.....	Washington C. H.....	3	53	56	.....	12	12	68	82
" C.....	Manchester	3	46	49	.....	6	6	55	89
" D.....	Ironton	3	45	48	.....	6	6	54	89
" E.....	Mt. Sterling.....	2	63	65	1	5	6	71	91
" F.....	Circleville.....	3	46	49	.....	4	4	53	88
" G.....	McArthur	3	43	46	.....	2	2	48	96
" I.....	Middleport.....	3	53	56	.....	8	8	64	87
Total .....	.....	31	398	429	2	71	73	502	85

EXECUTIVE DOCUMENTS.

EIGHTH REGIMENT OF INFANTRY.

Encamped at Galion, August 23-28.

Organization.	Location.	Present.			Absent.			Strength of organiza- tion.	Per cent. of attend- ance.
		Officers.	Enlisted men.	Aggregate.	Officers.	Enlisted men.	Aggregate.		
Field, Staff and Band.....	Akron	9	27	36	.....	.....	.....	36	100
Company A	Bucyrus	3	40	43	.....	13	13	56	71
“ B	Akron	3	55	58	.....	16	16	74	76
“ C	Polk	3	38	41	.....	10	10	51	80
“ D	Wooster	3	39	42	.....	19	19	61	70
“ E	East Palestine.....	3	37	40	.....	20	20	60	66
“ F	Beach City.....	3	28	31	.....	18	18	49	61
“ G	Wadsworth.....	3	48	51	.....	1	1	52	98
“ I	Galion	3	25	28	.....	4	4	32	90
Total .....	.....	33	337	370	.....	101	101	471	79

NINTH BATTALION OF INFANTRY.

Encamped at Wilmington, July 28—August 2.

Organization.	Location.	Present.			Absent.			Strength of organiza- tion.	Per cent. of attend- ance.
		Officers.	Enlisted men.	Aggregate.	Officers.	Enlisted men.	Aggregate.		
Field, Staff and Band.....	Columbus	3	3	6	.....	.....	.....	6	100
Company A	Springfield.....	3	54	57	.....	9	9	66	86
“ B	Columbus	3	39	42	.....	15	15	57	74
“ C	Xenia	2	49	51	1	11	12	63	76
Total .....	.....	11	145	156	1	35	36	192	85

THIRTEENTH REGIMENT OF INFANTRY.

Encamped at Dayton, July 7-12.

Organization.	Location.	Present.			Absent.			Strength of organiza- tion.	Per cent. of attend- ance.
		Officers.	Enlisted men.	Aggregate.	Officers.	Enlisted men.	Aggregate.		
Field, Staff and Band	Springfield	7	28	35	.....	.....	.....	35	100
Company A	"	3	54	57	.....	5	5	62	92
" B	Hillsboro.....	2	46	48	.....	20	20	68	71
" C	Germantown.....	2	30	32	1	21	22	54	60
" D	Georgetown.....	3	42	45	.....	10	10	55	80
" E	Miamisburg.....	3	28	31	.....	18	18	49	63
" F	Loveland	2	38	40	1	10	11	51	80
" G	Xenia	3	51	54	.....	14	14	68	80
" H	New Vienna.....	2	47	49	.....	3	3	52	90
Total .....	.....	27	364	391	2	101	103	494	79

FOURTEENTH REGIMENT OF INFANTRY.

Encamped at Lancaster, September 6-11.

Organization.	Location.	Present.			Absent.			Strength of organiza- tion.	Per cent. of attend- ance.
		Officers.	Enlisted men.	Aggregate.	Officers.	Enlisted men.	Aggregate.		
Field, Staff and Band	Columbus	8	31	39	1	2	3	42	94
Company A	"	2	42	45	.....	14	14	59	76
" B	"	3	45	48	.....	.....	.....	48	100
" C	Westerville.....	3	31	34	.....	10	10	44	77
" D	Marysville	2	34	36	.....	7	7	43	84
" E	Mt. Gilead	3	40	43	.....	7	7	50	86
" F	Columbus.....	3	46	49	.....	9	9	58	84
" G	Richwood.....	2	36	38	.....	5	5	43	88
" H	Canal Winchester.....	2	34	36	.....	7	7	43	84
" I	Lancaster	3	49	52	.....	6	6	58	89
" K	Delaware.....	3	38	41	.....	7	7	48	85
" L	Columbus.....	3	45	48	.....	3	3	51	94
Total .....	.....	38	471	509	1	77	78	587	87

SIXTEENTH REGIMENT OF INFANTRY.

Encamped at Port Clinton, August 17-22.

Organization.	Location.	Present.			Absent.			Strength of organiza- tion.	Per cent. of attend- ance.
		Officers.	Enlisted men.	Aggregate.	Officers.	Enlisted men.	Aggregate.		
Field, Staff and Band	Sandusky	6	20	26	.....	3	3	29	90
Company A	Toledo	3	43	46	.....	3	3	49	94
“ B	Sandusky	3	36	39	.....	5	5	34	87
“ C	Toledo	3	38	41	.....	10	10	51	80
“ D	Fostoria	3	43	46	.....	3	3	49	94
“ E	Bryan	3	32	35	.....	5	5	40	88
“ F	Napoleon.....	3	38	41	.....	29	29	70	59
“ H	Toledo	3	39	42	.....	16	16	68	62
“ I	Clyde.....	3	39	42	.....	6	6	48	89
Total .....	.....	30	328	358	.....	80	80	438	80

SEVENTEENTH REGIMENT OF INFANTRY.

Encamped at New Lexington, August 23-28.

Organization.	Location.	Present.			Absent.			Strength of organiza- tion.	Per cent. of attend- ance.
		Officers.	Enlisted men.	Aggregate.	Officers.	Enlisted men.	Aggregate.		
Field, Staff and Band	Columbus	8	5	13	1	1	2	15	86
Company A	New Lexington	3	45	48	.....	5	5	53	91
“ B	Zanesville	3	58	61	.....	14	14	75	81
“ C	Mt. Vernon.....	3	42	45	.....	7	7	52	87
“ D	Lower Salem	3	53	56	.....	15	15	71	79
“ E	New Matamoras	3	43	46	.....	12	12	58	79
“ F	Coshocton	3	40	43	.....	4	4	47	91
“ G	Newark	2	54	56	.....	4	4	60	90
“ H	Plimpton.....	3	52	55	.....	2	2	57	96
“ K	Hebron.....	3	56	59	.....	1	1	60	98
Total .....	.....	34	448	482	1	65	66	548	88

TOLEDO CADETS (UNATTACHED) INFANTRY.

Encamped at Washington, D. C.

Organization.	Location.	Present.			Absent.			Strength of organiza- tion.	Per cent. of attend- ance.
		Officers.	Enlisted men.	Aggregate.	Officers.	Enlisted men.	Aggregate.		
Toledo Cadets.....	3	34	37	.....	12	12	49	75

FIRST TROOP OF CAVALRY.

Encamped at Chicago, Illinois.

Organization.	Location.	Present.			Absent.			Strength of organiza- tion.	Per cent. of attend- ance.
		Officers.	Enlisted men.	Aggregate.	Officers.	Enlisted men.	Aggregate.		
First Troop of Cavalry.....	3	35	38	.....	.....	.....	38	100

FIRST REGIMENT OF LIGHT ARTILLERY.

Encamped at Delaware, August 10-15.

Organization.	Location.	Present.			Absent.			Strength of organiza- tion.	Per cent. of attend- ance.
		Officers.	Enlisted men.	Aggregate.	Officers.	Enlisted men.	Aggregate.		
Field, Staff and Band.....	Cleveland	6	23	29	2	.....	2	31	97
Battery A.....	"	3	60	63	1	1	2	65	97
" B.....	Cincinnati	4	34	38	.....	8	8	46	80
" C.....	Zanesville	5	42	47	.....	13	13	60	80
" D.....	Toledo	5	38	43	.....	13	13	56	80
" E.....	Springfield	5	57	62	.....	7	7	69	90
" F.....	Akron	2	48	50	2	10	12	62	81
" G.....	Marietta	4	62	66	1	12	13	79	83
" H.....	Columbus.....	4	48	52	.....	11	11	63	82
Total .....	.....	38	412	450	6	65	81	531	86

CONSOLIDATED REPORT BY REGIMENTS.

Organization.	Location.	Present.			Absent.			Strength of organiza- tion.	Per cent. of attend- ance.
		Officers.	Enlisted men.	Aggregate.	Officers.	Enlisted men.	Aggregate.		
First Regiment of Infantry..	Washington C. H.....	25	323	348	4	79	83	431	85
Second " "	Findlay	33	377	410	2	74	76	436	84
Third " "	Union City.....	31	372	403	.....	37	37	440	91
Fifth " "	Coit's.....	30	409	439	1	51	52	491	88
Sixth " "	Delaware.....	31	398	429	2	71	73	502	85
Eighth " "	Galion.....	33	337	370	.....	101	101	471	79
Ninth Battalion of Infantry	Wilmington.....	11	145	156	1	35	36	192	85
Thirteenth Regt. of Inf'y....	Dayton	27	364	391	2	101	103	494	79
Fourteenth " "	Lancaster	38	471	509	1	77	78	587	87
Sixteenth " "	Port Clinton.....	30	328	358	.....	80	80	438	80
Seventeenth " "	New Lexington.....	34	448	482	1	65	66	548	88
Toledo Cadets (unattached)									
Infantry.....	Washington D. C.....	3	34	37	.....	12	12	49	75
First Troop of Cavalry.....	Chicago, Illinois.....	3	35	38	.....	.....	.....	38	100
First Regt. of Lt. Artillery..	Delaware	38	412	450	6	75	81	531	86
Total .....	.....	367	4453	4820	20	658	878	5698	85

NATIONAL GUARD AT PAULDING RESERVOIR.

On the 26th of April, reliable information was received by your Excellency that the aqueduct, locks and other public property belonging to the canal, in Paulding county, were being destroyed by an armed body of lawless persons. By your orders I was directed to proceed forthwith to the place of trouble with such available troops as were thought necessary to aid the civil authorities to suppress these riotous demonstrations and protect the public property from further destruction. I immediately ordered Major H. S. Bunker, of the 16th Regiment of Infantry, to assemble as quickly as possible about fifty men from the Toledo companies of said Regiment, and also directed Captain Hopkins, of Battery D, 1st Regiment of Light Artillery, to assemble a sufficient number of men necessary to man one gatling section of his battery. With these troops under direct command of Major Bunker I left Toledo via the Wabash Railroad at 5:20 P. M., for the Paulding County Reservoir, at which place we arrived about 11 P. M., after a severe night march of six miles from Cecil to that point. I remained in camp with the military much of the time until they were relieved from duty May 6th.

The services rendered by these troops are fully set forth in the reports of Major Bunker and other officers embodied in this report. Great credit is due Major Bunker and the officers and men under his command for responding to the call with unusual promptness, for their excellent conduct while on duty, and for the cheerfulness and soldierly spirit in which every duty was discharged. On account of the long marches and inclemency of the weather at that season of the year, their service consisted of unusual hardships, severer on men unaccustomed to the exposure of field and tent life.

No funds are available for the payment of troops called into active service to meet an emergency like this. The men on duty under this call will be compelled to wait nearly a year for pay due them under the law. This is not right, and is seriously detrimental to the interests of the National Guard service. The Legislature should provide by law that the Governor of the State should have under his control, a sum of not less than \$25,000, to meet any such emergency that may arise in the future.

Such an appropriation is earnestly recommended.

(Telegram. Received 9:41 A. M.)

DEFIANCE, O., April 26, 1887.

Gov. J. B. Foraker:

On last night two hundred men marched on the canal in a body, captured guards and held in confinement until daylight. Worked all night on front and rear banks of reservoir, cutting ground enough to let water out, poured coal oil on lock and keeper's house at reservoir and burned all up. One hundred more men went to Tates and the other remaining lock, and blew them up with dynamite. No locks remain on the Wabash canal. The destruction is complete, and mob law reigns supreme. People of Defiance and Paulding counties call on you to protect State property.

(Signed)

E. SQUIRE.

(Telegram. Received 9:41 A. M.)

DEFIANCE, O., April 26, 1887.

Gov. J. B. Foraker:

The mob has again destroyed reservoir and three locks, besides destroying the lock-keeper's house at reservoir. This is fulfilling the mob's message. What protection can we expect?

(Signed)

S. FRANK EAGLE.

(Telegram. Received 9:45 A. M.)

Gov. J. B. Foraker:

Report comes to me this morning that last night (mob) destroyed two locks, burned one and lock-tender's home; also blew the banks of reservoir. Will proceed to repair. What can be done? Answer quick.

(Signed)

C. A. FLICKINGER.

(Telegram. Received 10:28 A. M.)

DEFIANCE, O., *April 26, 1887.**Gov. Foraker :*

The condition of affairs in Paulding county is deplorable. The rioting element seems to predominate, and effective measures should be used to preserve the State property and public peace.

(Signed)

L. B. PEASLEE.

(Telegram. Received 11:50 A. M.)

COLUMBUS, O., *April 26, 1887.**Adjutant-General H. A. Axline, Fostoria, Ohio :*

Telegrams from Defiance and Paulding report the aqueduct locks and other public property belonging to the canal destroyed last night by an armed body of rioters, who are reported to be still organized and making trouble and threatening violence. Take one company, whichever may be most convenient, and go immediately to the scene of the trouble and there in aid of the civil authorities suppress all such demonstrations. If you need more help you will command it. Report to me promptly here. I will notify Flickinger of the Board of Public Works of your coming.

(Signed)

J. B. FORAKER, *Governor.*

(Telegram. Received 12:35 P. M.)

COLUMBUS, O., *April 26, 1887.**Gen. H. A. Axline :*

So far as the State property is concerned, protect that. Aid the State authorities in control of it without regard to the civil authorities. Report promptly and fully.

(Signed)

J. B. FORAKER, *Governor.*

(Telegram. Received 1:20 P. M.)

FOSTORIA, O., *April 26, 1887.**Major H. S. Bunker, Toledo, Ohio :*

Assemble about fifty men from Toledo companies of Sixteenth Regiment as quickly as possible for duty in Paulding county and await further orders. I will arrive at Toledo on three-five Hocking Valley this afternoon. Meet me at train. Acknowledge receipt of this order.

(Signed)

H. A. AXLINE, *Adjutant-General.*

(Telegram. Received 12:39 P. M.)

FOSTORIA, O., *April 26, 1887.**J. B. Foraker :*

Dispatch received. Have ordered company at Toledo to assemble at once and await orders. Will go to Toledo on one-forty-five train and take company to Paulding or where needed. Will report from time to time.

(Signed)

H. A. AXLINE, *Adj't-General.*

(Telegram.)

TOLEDO, O., *April 26, 1887.**Gen. H. A. Axline, Fostoria, Ohio :*

Order received. Will act at once.

(Signed)

H. S. BUNKER.

(Telegram).

COLUMBUS, O., April 26, 1887.

Hon. C. A. Flickinger, Member Board Public Works, Defiance, O.:

I have ordered Gen. Axline to go immediately to the scene of trouble with one company of the National Guard, to aid the civil authorities to suppress rioters, protect the property, and preserve the peace. Please have the Sheriff of Paulding county make formal official demand on me for such help. Proceed immediately to make repairs of the property, and warn all disturbers of the peace that they interfere with you at their peril.

(Signed)

J. B. FORAKER, *Governor.*

(Telegram).

COLUMBUS, O., April 26, 1887.

S. Frank Eagle, Defiance, O.:

I have ordered Gen. Axline to go immediately to the scene of action with one company, and as many others as he may need to suppress the mob, protect the property and preserve the public peace, and have instructed Mr. Flickinger, of the Board of Public Works, to proceed immediately to repair the damage that has been done. The property of the State, and all law-abiding citizens will be fully protected, and every man who acts with or gives aid or comfort to the mob will do so at his peril. The law will be fully enforced to its extremest limit against all such. Keep me fully advised.

(Signed)

J. B. FORAKER, *Governor.*

(Telegram. Received 2:12 P. M).

DEFIANCE, O., April 26, 1887.

Gov. J. B. Foraker:

Sheriff Parr, of Paulding county, will be in Columbus with convict to-night; will call on you to-morrow. He will hesitate to ask you for assistance because of the public sentiment in his county. He has thus far made no effort to protect State property to my knowledge, although have made formal application to him to do so. Perhaps he will ask you for assistance when he meets you to-morrow. I have wired the members of the Board and the Chief Engineer to come here at once.

(Signed)

C. A. FLICKINGER.

(Telegram. Received 4:35 P. M).

TOLEDO, O., April 26, 1887.

Gov. J. B. Foraker:

Will leave via Wabash road at 5:20 with about fifty men and one gatling. Will go direct to Cecil unless directed otherwise by Flickinger, whom I have wired at Defiance for information.

(Signed)

H. A. AXLINE, *Adjutant-General.*

(Telegram).

TOLEDO, O., April 26, 1887.

Col. C. A. Flickinger, Defiance, O.:

Where do you want company? Will be on Wabash train, forty-three, this evening with troops. Answer, care of conductor of that train.

(Signed)

H. A. AXLINE, *Adjutant-General.*

(Telegram. Received 5:16 P. M.)

DEFIANCE, O., *April 26, 1887.**Gen. H. A. Axline, care Conductor Wab. train 43 :*

Leave troops at Cecil. Will meet them at Defiance.

(Signed)

C. A. FLICKINGER.

(Telegram. Received 7:36 A. M.)

CECIL, O., *April 27, 1887.**Gov. J. B. Foraker :*

Arrived at Cecil with sixty officers and men at eight last night. Crowd reported at locks, five miles distant; marched there with twenty men; fires still burning but crowd had disappeared. Returned to Cecil with troops at two o'clock this morning. No reports of further depredations since arrival. Board of Public Works will meet here to-day, when further action will be considered, and you advised. Soldier accidentally killed on guard last night. Remains sent to Toledo this morning.

(Signed)

H. A. AXLINE, *Adjutant-General.*

(Telegram).

CECIL, O., *April 27, 1887.**H. A. Guitner, Superintendent State Arsenal, Columbus, O. :*

Ship by first express forty overcoats and fifty blankets to my address at Cecil.

(Signed)

H. A. AXLINE, *Adjutant-General.*

(Telegram. Received 9:50 A. M.)

COLUMBUS, O., *April 27, 1887.**Gen. H. A. Axline, Cecil, O. :*

Overcoats and blankets leave via Toledo at 10:20.

(Signed)

H. A. GUITNER.

(Telegram. Received 10:21 A. M.)

CECIL, O., *April 28, 1887.**Gov. J. B. Foraker :*

Troops comfortably encamped at reservoir guarding State property. Board of Public Works here. One arrest made yesterday; others will follow as rapidly as possible. Request of Board asking for rewards and detectives seems proper. I will remain with troops to-day; report situation later. Address Cecil.

(Signed)

H. A. AXLINE, *Adjutant-General.*

(Telegram. Received 7:55 A. M.)

FOSTORIA, O., *April 29, 1887.**Gov. J. B. Foraker :*

Left Cecil last night. Everything quiet; property well guarded. Will reach Columbus at two this afternoon via Hocking Valley and report particulars.

(Signed)

H. A. AXLINE, *Adjutant-General.*

(Telegram. Received 7:38 P. M.)

CECIL, O., April 29, 1887.

Gov. J. B. Foraker :

Just in from reservoir. Cut closed. Expect to have repairs made in twenty days. Will give it my personal attention. Everything quiet and working well.

(Signed)

C. A. FLICKINGER.

(Telegram.)

CECIL, O., April 29, 1887.

Col. C. A. Flickinger, Defiance, O. :

Troops cannot be retained here unless matters are pressed vigorously. Governor directs that your board act promptly. Answer immediately.

(Signed)

H. A. AXLINE, Adjutant-General.

(Telegram. Received 5:19 P. M.)

DEFIANCE, O., May 2, 1887.

Gen. H. A. Axline, Cecil, O. :

Matters are pushed with vigor. Come down on first train.

(Signed)

C. A. FLICKINGER.

(Telegram. Received 9:46 A. M.)

DEFIANCE, O., May 3, 1887.

Gov. J. B. Foraker :

Have been with troops at reservoir since Sunday morning. Everything quiet and in good condition. Had interview here with Flickinger and Haymaker this morning. Haymaker visits Antwerp to-day. Nothing new to report. Address Defiance to-day.

(Signed)

H. A. AXLINE, Adjutant-General.

(Telegram. Received 6:50).

DEFIANCE, O., May 2, 1887.

Gen. H. A. Axline, Cecil, O. :

I wish you to come down. Please answer.

(Signed)

C. A. FLICKINGER.

(Telegram. Received 11:46 A. M.)

COLUMBUS, O., May 3, 1887.

Gen. H. A. Axline :

Remain at or about Defiance, and keep me advised as to where I can communicate with you until I hear from Haymaker.

(Signed)

J. B. FORAKER.

(Telegram. Received 9:35 A. M.)

DEFIANCE, O., May 4, 1887.

Gov. J. B. Foraker :

Haymaker's dispatch to-day explains situation. Will retain about fifty men on duty until further action is taken, unless otherwise directed. Further arrests will probably be made to-morrow. Will go to camp at reservoir at noon to-day. Address Cecil.

(Signed)

H. A. AXLINE, *Adjutant-General.*

(Telegram. Received 8:28 A. M.)

DEFIANCE, O., May 5, 1887.

Gen. H. A. Axline, on No. 42, Napoleon, O. :

Governor telegraphs. Fleck goes to Columbus. I stop proceedings until further instructed.

(Signed)

HAYMAKER.

(Telegram. Received 8:37 A. M.)

DEFIANCE, O., May 5, 1887.

Gov. J. B. Foraker :

All quiet this morning. Will report in person this afternoon on arrival of Hocking Valley train.

(Signed)

H. A. AXLINE, *Adjutant-General.*

(Telegram. 8 P. M.)

COLUMBUS, O., May 5, 1887.

Maj. H. S. Bunker, Commanding Detachment, O. N. G., Cecil, O. :

The troops on duty at the Paulding Reservoir are hereby relieved, and the commanding officer is directed to break camp as early as practicable and to proceed with his command to Toledo and there dismiss the same. He will arrange for transportation of men and baggage. Telegraph receipt of these orders. By command of the Governor.

(Signed)

H. A. AXLINE, *Adjutant-General.*

(Telegram. Received 8:40 A. M.)

CECIL, O., May 6, 1887.

H. A. Axline :

Dispatch received. Will leave for Toledo May 6, 3 P. M.

(Signed)

A. R. ROGERS.

Capt. Commanding Detachment.

(Telegram. Received 7:46 P. M.)

TOLEDO, OHIO, May 6, 1887.

Gen. H. A. Axline :

Troops returned this evening from the Reservoir, and all in good health. The conduct of officers and men has been soldierly and creditable in every respect. Will report fully in writing at earliest possible moment.

(Signed)

H. S. BUNKER, *Major.*

REPORT OF MAJOR H. S. BUNKER, COMMANDING DETACHMENT AT
PAULDING RESERVOIR.

TOLEDO, OHIO, *May 10, 1887.*

Gen. H. A. Axline, Adjutant-General of Ohio :

SIR: At 2 o'clock P. M. of April 26, 1887, I received the following order from you by wire :

FOSTORIA, OHIO, *April 26, 1887.*

Major H. S. Bunker, Toledo, Ohio :

Assemble about fifty men from the Toledo companies of the Sixteenth Regiment as quickly as possible, for duty in Paulding county, and await further orders. I will arrive at Toledo on three-five train, Hocking Valley, this afternoon. Meet me at train. Acknowledge receipt of this order promptly.

H. A. AXLINE, *Adjutant-General.*

I at once issued written orders to the Commandants of Companies A, C and H of the Sixteenth Regiment to assemble the men of their respective companies at the Armory, at 4 o'clock P. M. for duty, and dispatched Adjutant Merrill and Sergeant Major Beckham in carriages to deliver the orders, and to assist in notifying the men to assemble. Upon your arrival we proceeded at once to the Armory, where we found more than fifty men already assembled and ready for duty.

Captain O. J. Hopkins, of Battery D, First Regiment, O. L. A., was, after your arrival, ordered by you to report to me for duty with one of the gatling guns of his battery in charge of a sufficient number of men to properly handle it, which order was promptly and cheerfully obeyed. At twenty minutes past five o'clock P. M. my command, consisting of detachments from Co. A, Sixteenth Regiment, under command of Capt. Weir; Co. C, under command of Lieutenant W. H. Moore; Co. H, under command of Capt. Rogers; Battery D, First Regiment, L. A., O. N. G., under command of Capt. O. J. Hopkins, Surgeon T. J. Cronise, Adjutant I. T. Merrill, Acting Quartermaster E. W. Rydman, Sergeant Major C. H. Beckham and Commissary Sergeant Charles G. D. Shon; enlisted men, 57; commissioned officers, 8; total, 65, were on board an express train at Toledo. We arrived at Cecil, Ohio, about eight o'clock P. M., where we disembarked. The infantry was marched to the town hall, where guns were stacked and a sufficient guard placed over them until the men could eat their suppers, which I had ordered provided in advance. The gatling gun was placed in the yard in front of the Chester House, and properly guarded by the men in charge. It was about this time that the only casualty of the expedition occurred. Private Fred. Reeves, of Company H, a young man not many months in the service, had temporarily relieved one of the regular guards, and while carelessly leaning upon the gun in some manner, caused its discharge, the ball passing through the neck and spine, killing him instantly. I caused the matter to be carefully investigated, and reports to be made to me by Surgeon Cronise, Captain Weir and Lieut. W. H. Moore, which reports I transit herewith, together with the statements of other parties having information in regard to the unfortunate occurrence. The mother of the young man is a widow in poor circumstances financially, and was largely dependent upon her son for support, and I recommend and sincerely hope the Legislature, at its next session, will make suitable appropriation for her relief.

At about nine o'clock P. M., of the same evening I started with Captain Weir, Lieutenant Moore, Adjutant Merrill, Sergeant Major Beckham and 25 men in line for the scene of destruction of State property at the reservoir, a distance of some seven miles by the road from Cecil, where we arrived about midnight. We found the canal locks blown up by dynamite, the building owned by the State in ashes, and a wide cut in the levee of the reservoir, through which the water was rushing with

great force and noise into the canal. The rioters had made good their escape, having been warned of our approach by signals fired at intervals by some person who followed us. Finding nothing at the reservoir requiring our immediate attention, we were ordered by you to return to Cecil, where we arrived about 2:30 o'clock A. M., tired and foot sore, having within about twelve hours collected a force of 65 men, traveled 64 miles by rail and marched a distance of 14 miles over very rough roads and in intense darkness. By my orders Lieutenant Rydman, Acting Quartermaster, had caused a good substantial supper to be prepared for the men who had made the march to the reservoir. The supper was partaken of with a keen relish, after which the men turned in for some needed rest and sleep. On the afternoon of next day, April 27th, I took my entire command (except a small guard under command of Captain Rogers to guard supplies at Cecil) out to the reservoir and went regularly into camp at a point where we could properly guard State property and prevent further destruction of the banks of the reservoir. We found a large crowd assembled, to whom I read the Governor's proclamation, and ordered them to disperse forthwith, which order was obeyed with alacrity. Guards were stationed at all proper places along the banks of the reservoir and in rear of our camp, the countersign was given out at night, and guard and picket duty was performed in a manner that would have done credit to old soldiers in the presence of an enemy. The camp was regularly policed, inspections were had, dress-parades held and everything else possible to be done in the line of duty as soldiers received due attention. This duty was continued until May 6th, when by the Governor's orders we were relieved and ordered to return home.

The promptness with which men and officers reported for duty and the cheerfulness with which they endured the fatigue of the long march, the exposure to inclement weather and the many other discomforts of service in the field, and the very soldierly manner in which they performed all duty, is worthy of more than passing notice and merits my warmest praise. It clearly shows that we have in Ohio a military force so well drilled and disciplined that it can be relied upon in every emergency to serve the State in a most satisfactory manner, and it should receive further assistance and encouragement by liberal appropriations on the part of the Legislature of Ohio for pay, subsistence, clothing and camp equipage. A sum of money should also be appropriated and placed at the disposal of the Commander-in-Chief, out of which to pay troops called upon to do duty in emergencies, as many of the men in the service are dependent upon their daily earnings for the support of families, who must suffer great inconvenience if payment is long deferred.

The thanks of myself and of my command are due to you for your prompt and efficient efforts to obtain overcoats, blankets and cooking utensils for the men after our arrival in camp, and for other attentions to our wants while you were with us.

I transmit herewith the report of Surgeon T. J. Cronise, of the 1st Regiment L. A., O. N. G., who was ordered to accompany us and to whose faithful efforts to preserve the health of my command I am greatly indebted.

Very respectfully,

(Signed)

H. S. BUNKER,

Major 16th Regiment, O. N. G., Commanding troops in Paulding County.

TOLEDO, O., May 16, 1887.

Major H. S. Bunker:

SIR: Having, by General Orders, been assigned to duty as Surgeon of the troops ordered to Paulding county, O., I make the following report:

On April 26, 1887, we started for Cecil, Paulding county, Ohio, where we arrived about 8 o'clock P. M. Here occurred the only casualty of our stay, which was the death of private Frederick Reeves, of Co. H, 16th Regiment, O. N. G., by the

accidental discharge of his own gun. On the same night two men were overcome by the march to the reservoir and back, and were sent home next morning. On the 27th inst., we marched to the reservoir, where we encamped and remained until ordered to break camp and return home.

The camp ground was an open field suitable for the small force present. The grounds were policed and kept in good condition. The weather the first week was cold, rainy and very windy, so that good fires had to be kept burning day and night. The balance of the time the weather was warmer with occasional rains. The water was good and the rations excellent. To this fact and to the good cook we had with us, is to be largely attributed the good health of the command, only one man having been excused from duty for one day during the entire encampment.

In conclusion, let me earnestly suggest that every soldier be furnished with a blanket, poncho, knapsack, canteen and in fact, all the appurtenances of a soldier, as this last call showed the necessity of them; for a number of the soldiers, not having blankets, suffered from cold, and on night march suffered from thirst, for want of canteens of water.

For the sake of the health and comfort of the soldiers they ought to be furnished.

Yours truly,

(Signed)

T. J. CRONISE,
Surg. 1st Reg. L. A., O. N. G.

HEADQUARTERS BATTERY D, FIRST REGIMENT

LIGHT ARTILLERY, O. N. G.,

TOLEDO, OHIO, May 6, 1887.

General H. A. Axline, Adjutant-General:

SIR: In obedience to telegraphic orders of His Excellency, Governor Foraker, received at 10:30 o'clock last night, the troops stationed at the Paulding County Reservoir broke camp at 9 A. M. to-day and returned to this city and were dismissed from duty.

The health of the men is excellent, and their conduct under arms was such as to reflect great credit upon the Ohio National Guard.

A full and complete report, I presume, will be made to you by the officers who commanded these troops for the greater period of their late service.

Very respectfully,

(Signed)

O. J. HOPKINS,
Captain Commanding Detachment.

STRENGTH OF TROOPS ON DUTY AT PAULDING RESERVOIR FROM APRIL 26 TO MAY 6,
INCLUSIVE.

Organization.	Officers.	Enlisted men.	Total.	Days service of officers.	Days service of enlisted men.
Field and Staff, 16th Regiment Infantry.....	3	2	5	31	19
Company A.....	3	32	35	28	204
“ C.....	2	26	28	17	205
“ H.....	2	32	34	22	196
Battery D, First Regiment Light Artillery.....	3	13	16	18	109
Total	13	105	118	116	733

Average strength for eleven days :

Officers ..	10
Enlisted men.....	67
Total.....	77

EXPENSES AT PAULDING RESERVOIR.

Per Diem.

Major H. S. Bunker, 16th Infantry, Field and Staff	\$231 89
Captain J. M. Weier, Co. A, 16th Infantry.....	530 50
“ J. R. Wade, Co. C, “	486 67
“ A. R. Rogers, Co. H, “	492 83
“ O. J. Hopkins, Battery D, 1st Light Artillery.....	301 33
Total	\$2,043 22

SUBSISTENCE.

O. B. Crisbaugh.....	\$133 30
Herman, Swalley & Hogart	69 95
M. N. Ullery.....	190 37
John White.	30 80
Board of Public Works.....	100 00
E. W. Rydman.....	28 88
Antwerp Hub and Spoke Co	5 50
John Dallas	22 00
Henry Sterling.....	14 00
W. M. Cullison.....	26 90
Total	\$621 70

TRANSPORTATION.

Wabash Railway.....	\$261 95
Major H. S. Bunker.....	9 01
Paulding Furnace and Farm.....	10 50
Albert Johnson.....	1 50
George McCormick.....	3 00
H. F. Wiswell.....	80 75
Albert Hutchins.....	28 75
Toledo Transfer Co.....	9 87
Total	\$405 33

RECAPITULATION.

Per diem.....	\$2,043 22
Subsistence.....	621 70
Transportation	405 33
Total	\$3,070 25

OFFICIAL REGISTER
OF THE
OHIO NATIONAL GUARD,
NOVEMBER 15TH, 1887.

COMMANDER-IN-CHIEF AND STAFF.

Name, Rank and Date of Commission.	Service.		Born.	Address.
	In National Guard.	In the Armies of the United States.		
<i>Governor and Commander-in-Chief.</i> Joseph B. Foraker, Jan. 11, 1886.	.....	Private Co. A, 89th O. V. I., July 14, 1862. Sergeant, Aug. 26, 1862; 1st Sergeant, Jan. 1, 1863; 2d Lieutenant, June 13, 1863; 1st Lieutenant, March 4, 1864; appointed Adjutant Sept. 11, 1864; transferred to Co. G, Sept. 20, 1864; detailed acting Signal Officer, Army of Ga., Sept. 18, 1864; breveted Captain U. S. vols., March 19, 1865; Aide-de-Camp to Gen. Slocum, May 27, 1865; discharged, close of war, June 14, 1865.	Ohio	Columbus.
<i>Adjutant-General, Inspector-General and Chief-of-Staff, with rank of Major-General.</i> Henry A. Axline, Jan. 11, 1886.....	Private Co. G, 11th Reg't, O. N. G., Aug. 11, 1863; discharged May 1, 1866; private "Muskingum Rangers," O. N. G., Aug. 24, 1877; Captain, Sept. 7, 1877; Major 17th Reg't, Oct. 25, 1877; Lt.-Col., Jan. 22, 1881; Colonel and Assistant Adjutant-General of Ohio, March 2, 1881; re-commissioned same Jan. 9, 1882; term expired Jan. 14, 1884.	Private Co. G, 159th O. V. I., May 2, 1864; discharged Aug. 24, 1864; private Co. G, 196th O. V. I., Feb. 13, 1865; discharged Sept. 20, 1865, close of war.	Ohio	Columbus.
<i>Quartermaster-General and Commissary-General of Subsistence, with rank of Brigadier-General.</i> Asa S. Bushnell, Jan. 11, 1886.....	Captain Co. A, 35th Reg't, O. N. G., Aug. 8, 1863; resigned Oct. 26, 1866.	Captain Co. E, 152d Reg't, O. V. I., May 10, 1864; mustered out Sept. 2, 1864.	New York.	Springfield.
<i>Judge-Advocate General, with rank of Brigadier-General.</i> Asahel W. Jones, Jan. 11, 1886 .....	.....	.....	.....	Youngstown.

[Surgeon-General, with rank of Brigadier-General.	.....	Asst. Surgeon, 17th Reg't, O. V. I., Feb. 14, 1862; Surgeon, Dec. 12, 1862; re- signed Dec. 26, 1864.	.....	Cleveland.
Henry J. Herrick, Jan. 11, 1886... Assistant-Adjutant General, with rank of Colonel.	.....	Private Co. D, 55th O. V. I., Sept. 13, 1861; Sergeant, Oct. 20, 1861; 1st Ser- geant, Oct. 2, 1862; 2d Lieutenant, May 2, 1863; A. A. I. G. Artillery, 11th A. Corps, Aug. 1863 to Jan. 1864; 1st Lieutenant, March 29, 1864; Captain, Oct. 14, 18 4; mustered out close of war July 11, 1865.	Ohio	Columbus.
Chief of Engineers, with rank of Colonel.	.....	Private 5th N. J. Vols., April 22, 1861; 2d Lieutenant Co. D, Aug. 28, 1861; re- signed Aug. 2, 1862; private Co. I, 26th N. J. V., Sept. 5. 1862; Corporal, Sept. 5, 1862; Serg.-Major, Sept. 18, 1862; 1st Lieutenant, Co. D, Jan. 16, 1863; Cap- tain, March 8, 1863; mustered out June 27, 1863; Adjutant 2d N. J. Cav., June 29, 1863; Major, June 30, 1865; mustered out Nov. 1, 1865.	New York.	Painesville.
Aides-de-Camp, with rank of Colonel.	.....	2d Lieutenant and Adjutant Camp Per- rin, Trenton, N. J., June 7, 1862; State Mustering Officer at Flemington, N. J., July 25, 1862; 1st Lieutenant and R. Q. M. 15th N. J. V. I., July 25, 1862; mustered out close of war, June 22, 1865.	Mass	Cincinnati.
Lowe Emerson, Jan. 11, 1886.....	.....	.....	.....	Cincinnati.
Arthur L. Fogg, Jan. 11, 1886 .....	.....	.....	.....	Cincinnati.
Harry E. Mead, Jan. 11, 1886.....	Private Dayton Zouaves, O. I. M. 1872; continued in Harries Guard, O. N. G., until formation of 4th Reg't, O. N. G.; 2d Lieutenant Co. A, 4th Reg't, June 26, 1878; 1st Lieutenant June, 4, 1879; Captain July 14, 1880; resigned Nov. 25, 1882.....	.....	Ohio	Dayton.
George P. Waldorf, Jan. 11, 1886..	.....	.....	Ohio	Lima.

COMMANDER-IN-CHIEF AND STAFF—Concluded.

Name, Rank and Date of Commission.	Service.		Born.	Address.
	In National Guard.	In the Armies of the United States.		
George L. Couch, Jan. 11, 1886.....	.....	.....	Ohio	Wellington.
Harry C. Sherrard, Jan. 11, 1886.....	.....	.....	Ohio	Steubenville.
Chas. E. Groce, Jan. 11, 1886.....	Capt. Co. D, 6th Batt., May 16, 1876; resigned June 1, 1878; Colonel and Aide-de-camp, June 12, 1880; re-commissioned Jan. 9, 1882; term expired Jan. 14, 1884.....	.....	.....	.....
Cortland L. Kennan, Jan. 11, 1886.....	Private Co. G, 16th Reg't, Aug. 7, 1877; 1st Sergeant, Aug. 9, 1877; 2d Lieut., May 1, 1879; 1st Lieutenant, May 13, 1882; Captain, Dec. 30, 1885.....	.....	Ohio	Circleville.
Moses H. Neil, Jan. 11, 1886.....	.....	.....	Ohio	Norwalk.
Floyd L. Smith, Jan. 11, 1886.....	.....	2d Lieutenant 58th O. V. I., Oct. 23, 1861; 1st Lieutenant and Adjutant 1st O. V. C., Dec. 9, 1861; resigned June 16, 1862. Private Co. E, 11th O. V. I., Aug. 11, 1862; honorably discharged Feb. 5, 1864.	Ohio	Columbus.
			Ohio	Portsmouth.

ARTILLERY—FIRST REGIMENT.

Name, Rank and Date of Commission.	Company.	Service.		Born.	Address.
		In National Guard.	In the Armies of the United States.		
<i>Colonel.</i>					
Louis Smithnight, June 14 1886.....	Private, Battery E, 1st Reg't, L. A., May 10, 1858; Capt. "Cleveland Light Artillery," June 3, 1873; re-commissioned June 6, 1878; re-commissioned June 22, 1883.	Private, Battery E, 1st Reg't, L. A., April 21, 1861; Corporal June 3, 1861; Captain, 20th Battery O. V. A., August 21, 1862; resigned April 25, 1863, for disability.	Germany..	Cleveland.
<i>Lieutenant-Colonel.</i>					
George Sintz, June 14, 1886	Captain, 5th Battery, July 25, 1881.	Private, Co. A, 94th O. V. I., Aug. 14, 1862; discharged Dec. 11, 1862, for disability; re-enlisted Private, 16th Battery, O. V. A., March 20, 1864; mustered out close of war, August 2, 1865.	Ohio	Springfield.
<i>Majors.</i>					
Edmund C. Brush, June 14, 1886.	Private, Battery C, 1st L. A., April 20, 1886; Capt., April 24, 1886.....	.....	Ohio	Zanesville.
Edward O. Dana, June 14, 1886	Private, Co. B, 1st Reg't, Feb. 10 1880; Corporal, Jan. 20, 1881; 2d Lieutenant, Co. F. Nov. 6 1882; transferred to Co. B, May 19, 1883. A., June 28, 1884; Captain, Battery B, Oct. 8, 1884; resigned June 3, 1885.....	.....	
<i>First Lieutenant and Adjutant.</i>					
Henry M. Clewell, June 22, 1883	Ass't Surgeon, July 6, 1881; 1st Lieutenant, Battery A, June 22, 1883; appointed Adjutant 1st Reg't, L. A., Aug. 30, 1887 .....	.....	New York Ohio	Cincinnati. Cleveland.
<i>First Lieutenant and Quartermaster.</i>					
Alex. C. Caine, June 30, 1886	Served (too young to be mustered) in 31st O. V. I, from Aug., 1861, to Jan., 1862, and with 90th O. V. I., from Aug., 1862, to May, 1863	Ohio	Columbus.
<i>Surgeon.</i>					
Thomas J. Cronise, June 30, 1886.....	Captain and Ass't Surgeon, 4th Battery, L. A., Dec. 12, 1877; re-commissioned Dec. 12, 1882.	Private, Co. I, 14th O. V. I., 3 months' service; Acting Ass't Surgeon, U. S. V., Oct. 1, 1861; resigned Sept. 12, 1864.	Ohio.....	Toledo.

ARTILLERY—FIRST REGIMENT—Continued.

Name, Rank and Date of Commission.	Company.	Service.		Born.	Address.
		In National Guard.	In the Armies of the United States.		
<i>Assistant Surgeon.</i>					
B. B. Brashear, June 30, 1886.....	.....	.....	.....	.....	Akron.
<i>Chaplain.</i>					
L. B. Moore, June 30, 1886.....	.....	.....	Private, Co. B, 10th W. Va. V. I., April 6, 1862; honorably discharged June 12, 1865.	W. Va.....	Cambridge.
<i>Captains.</i>					
Owen J. Hopkins, Nov. 13, 1877	D	Private, 1st Ind. Battery, Aug. 19, 1868; 1st Sergeant, Aug. 20, 1876; 1st Lieutenant, May 23, 1877; Captain, 4th Battery, Nov. 13, 1877; re-commissioned Nov. 13, 1882.	Private, Co. K, 42d O. V. I., Sept. 27, 1861; Sergeant, Nov. 3, 1863; Q. M. Sergeant, Sept. 27, 1864; mustered out expiration of term of service, Oct. 14, 1864; 1st Lieutenant, 182d O. V. I., Oct. 25, 1864; discharged March 2, 1865; re-commissioned 1st Lt. and R. Q. M., 182d O. V. I., June 30, 1865; mustered out close of war, July 7, 1865.	Ohio	Toledo.
Joseph C. Ewart, November 27, 1877..	F	Captain, 6th Battery, Nov. 27, 1877; re-commissioned Jan. 5, 1883.	Private, Co. D, 29th O. V. I., 3 months' service; re-enlisted Sept. 10, 1861; discharged as Sergeant April 30, 1862; Private, Co. F, 45th O. V. I., Aug. 10th, 1862; Serg't, Sept. 6, 1862; 1st Sergeant, Oct. 31, 1864; mustered out June 29, 1865; commissioned 2d Lieutenant, June 16, 1865, but never mustered	Ohio	Akron.
Charles A. Miller, March 8, 1884.....	G	.....	Private, Co. H, 7th O. V. C., Sept. 2, 1862; Corporal, June 30, 1864; mustered out close of war, July 3, 1865.	Ohio	Marietta.
Eli G. Donaldson, April 10, 1884.....	H	Private Battery H, 1st Reg't, L. A., April 9, 1884 .....	.....	Ohio	Columbus.

William G. Smith, June 18, 1885.....	B	Private, 2d Battery, March 4, 1884; Sergeant, July 10, 1884; 2d Lieutenant, Oct. 22, 1884.....	.....	Kentucky.	Cincinnati.
John G. Kennan, June 24, 1886.....	E	Private, Co. G, 16th Reg't, O. N. G., Dec. 24, '78; honorably discharged Sept. 1, 1882; Private, 5th Battery, May 5, 1884; Sergeant, June 16, 1884; 2d Lieutenant, May 8, 1886. ....	.....	Ohio.....	Springfield.
Henry A. Leslie, July 13, 1887.....	C	.....	Private, Co. K, 97th O. V. I., Aug. 12, 1862; Sergeant, Sept. 20, 1862; discharged June 15, 1865, close of war. Wounded at Kenesaw Mt., June 27, 1864.	"	Zanesville.
Lewis Kimmerlen, December 9, 1882.	D	Private, 1st Ind. Battery, Dec. 4, 1876; Sergeant, April 5, 1878; 2d Lieutenant, 4th Battery, Feb. 23, 1880.....	.....	Germany..	Toledo.
David Dow, March 8, 1884	G	2d Lieutenant, 7th Battery, Jan. 8, 1878; 1st Lieutenant, April 18, 1878; Captain, Jan. 13, 1880; resigned Feb. 28, 1884.	Private, Co. B, 18th O. V. I., April 17, 1861; Private, Battery C, 1st W. Va. L. A., Oct. 1, 1861; Corporal, May, 1862; Sergeant, Jan. 1, 1863; mustered out June 28, '65.	Ohio.....	Marietta.
Frank D. McCarthy, Feb. 20, 1886	B	Private, 2d Battery, March 4, 1884; Corporal, July 2, 1884; Sergeant, Feb. 13, 1885 .....	.....	Ohio.....	Cincinnati.
Geo. W. Workman, April 8, 1886	F	2d Lieutenant, Battery F, Feb. 22, 1886.....	.....	" .....	Akron.
James C. Ogden, Jan. 5, 1887	E	Private, 9th Battery, (afterward 5th Battery and Battery E), Sept. 22, 1881; Q. M. Sergeant, March 16, 1882; 2d Lieut., June 12, 1884..	.....	Ohio.....	Springfield.
J. Wm. Koos, July 13, 1887	C	Private, Battery C, April 20, 1886; 2d Lieutenant, May 14, 1886 .....	.....	" .....	Zanesville.
Fred. A. Gay, Oct. 24, 1887.....	A	Private, May 15, 1880; Corporal, June 12, 1881; Gunner, Nov. 15, 1883; Sergeant, July 10, 1884; 2d Lieut., May 22, 1886 .....	.....	New York.	Cleveland.
John C. Goldsmith, July 9, 1883.....	G	Private, Dec. 24, 1877; Sergeant, May 9, 1877; 1st Serg't, May, 1880.	Private, Co. A, 87th O. V. I., May 28, 1862; (three months' service). Private, Co. B, 77th O. V. I., Jan. 18, 1864; honorably discharged March 8, 1866.	Ohio.....	Marietta.

ARTILLERY—FIRST REGIMENT—Continued.

Name, Rank and Date of Commission.	Company.	Service.		Born.	Address.
		In National Guard.	In the Armies of the United States.		
Second Lieutenants—Continued.					
Furman Upham, November 6, 1884..	D	Private 1st Ind. Battery, April 8, 1878; re-enlisted April 16, 1883.	Private, Co. C, 1st O. V. C., Aug. 15, 1861; discharged Sept. 17, 1864.	N. J.....	Toledo.
Geo. U. Roulet, May 21, 1886.....	D	Private Co. A, 16th Reg't, May 6, 1873; Sergeant, Feb. 1, 1876; 2d Lieutenant, August 18, 1878; 2d Lieut., Battery D, May 2, 1886.....	.....	N. J.....	Toledo.
James Parker, May 25, 1886.....	G	Private, 7th Battery, (afterward Battery G), Dec. 24, 1877; Corporal May 1, 1878; Sergeant, May 1, 1879; Q. M. Sergeant, July 1, 1884.....	.....	Virginia....	Marietta.
Charles Hartman, June 3, 1886.....	H	Private, Battery H, April 9, 1884; Corporal, April 14, 1884; Sergeant, Nov. 15, 1884; Q. M. Sergeant, Dec. 20, 1884; 1st Sergeant, Dec. 1, 1885.....	.....	Ohio.....	Columbus.
Collin J. Forbes, June 3, 1886.....	B	Private, 2d Battery, July 2, 1884; Sergeant, June 20, 1885.....	.....	"	Cincinnati.
Dudley G. Gray, June 4, 1886.....	H	Private, Battery H, April 9, 1884..	.....	"	Columbus.
Horace E. Smith, June 24, 1886.....	E	Private, 5th Battery. (afterward Battery E.) Oct. 12, 1882; Corporal, June 16, 1884.....	.....	"	Springfield.
Bennett L. Taylor, June 28, 1886.....	C	Private, Battery C, April 20, 1886..	.....	"	Zanesville.
Edgar E. Peters January 5, 1887.....	E	Private, Battery E, Sept. 10, 1883; Corporal, June 16, 1884; Sergeant, July 17, 1886; discharged Dec. 13, 1886, to accept promotion.....	.....	.....	Springfield.
Theo. F. McConnell, March 16, 1887..	A	Private, Battery A, July 25, 1882..	..... Private, Co. C, 84th O. V. I., May 31, 1862; discharged Sept. 20, 1862 (4 mos. service); Private Co. A, 171st O. V. I., April 27, 1864; discharged expiration of term of service Aug. 20, 1864.	..... Ohio.....	Cleveland.

James D. Chandler, March 24, 1887 .. William A. Scott, July 13, 1887	F C	..... Private, Battery C, May 4, 1886; Corporal, Feb. 10, 1887; Sergeant, May 20, 1887.	..... Enlisted as drummer Co. B, 159th O. V. I.	..... .....	Akron. Zanesville.
<i>Captains and Assistant Surgeons.</i>					
Emil V. Helfferich, December 6, 1882	B	Private, Co. B, 1st Reg't, May 29, 1878; 1st Lieutenant, Co. I, April 2, 1880.....			
F. C. Frank, June 22, 1883.....	A	Private, Battery A, May 2, 1882....		France	Cincinnati.
Allen H. Vance, May 13, 1884.....	E	Private, Jan. 10, 1883; Hospital Steward, 5th Battery, (afterward Battery E,) Jan. 15, 1883.....		Bohemia...	Cleveland.
O. M. Wiles. June 19, 1884.....	G	.....		Ohio	Springfield.
Arthur A. Thomen, May 5, 1886.....	H	Private, Battery H, April 9, 1884; Hospital Steward, April 14, 1884.		.....	Marietta.
Henry T. Sutton, May 5, 1886.....	C	Private, Battery C, April 20, 1883..		Ohio	Columbus.
Wilson W. Cullison, August 3, 1886..	D	.....	Private, Co. C, 32d O. V. V. I., Feb. 24, 1864; discharged close of war, July 20, 1865.	"	Zanesville.
				"	Toledo.

INFANTRY—FIRST REGIMENT.

<i>Colonel.</i>					
Frederick W. Moore, Oct. 22, 1884.....	.....	.....	2d Lieutenant, 5th Reg't, O. V. I., April, 1861; 1st Lieutenant, June 5, 1861; Captain, Sept. 4, 1861; discharged July 23, 1862; Colonel, 83d O. V. I., September 13, 1862; mustered out close of war, Aug. 10, 1865; Brevet Brigadier Gen- eral, March 26, 1865; 1st Lieuten- ant, 19th U. S. I., Feb. 23, 1866. Private, Co. F, 34th O. V. I., July 25, 1861; Corporal and Sergeant, 1863; 2d Lieutenant, Sept. 30, 1864; 1st Lieutenant, 36th O. V. I., March 8, 1865; mustered out close of war, July 27, 1865.	Ohio	Cincinnati.
<i>Lieutenant-Colonel.</i>					
Morton L. Hawkins, July 11, 1884.....	.....	.....		.....	Cincinnati.
<i>Majors.</i>					
James Pettibone, June 7, 1884. ....	.....	Corporal Cincinnati Zouave Bat- talion, from 1868 to 1871.....		.....	Cincinnati.

INFANTRY—FIRST REGIMENT—Continued.

Name, Rank and Date of Commission.	Company.	Service.		Born.	Address.
		In National Guard.	In the Armies of the United States.		
<i>Majors—Continued.</i> Abraham L. Whitney, May 23, 1887.....		Private 2d Battery, O. N. G., Nov. 7, 1884; Corporal April, 1885; Sergeant, Aug. 31, 1885; discharged to accept promotion to Captain, Oct. 29, 1885.....	.....	Michigan..	Cincinnati.
<i>First Lieutenant and Adjutant.</i> Charles Z. Riley, July 23, 1885.....		Cincinnati.
<i>First Lieutenant and Quartermaster.</i> Edwin J. Lukens, Sept. 20, 1884.....		Private, Cincinnati Zouave Guard, 1859 to 1861.	Private, Co. D, 2d O. V. I., April 16, 1861; discharged, Aug. 1, 1861; Private, 2d O. V. C., Oct., 1862; Reg't Q. M. Sergeant; 2d Lieutenant, June 16, 1865; 1st Lieutenant, July 5, 1865; mustered out, Sept. 11, 1865.	Pa.....	Cincinnati.
<i>Surgeon.</i> Adolphus E. Jones, Sept. 29, 1881.....		Cincinnati.
<i>Assistant Surgeon.</i> Anderson N. Ellis, Dec. 10, 1883.....		Cincinnati.
<i>Chaplain.</i> John H. Ely, Dec. 2, 1884.....		Corporal and Sergeant, Co. B, "Burnet Rifles" in Kirby Smith's and Jno. Morgan Raid; Sergeant, Co. F, 7th O. N. G., July 30, 1863; 1st Sergeant Co. F, 137th O. V. I., May 2, 1864; mustered out, Aug. 19, 1864; mate U.S.S., Chillicothe, Mississippi Squadron, Sept. 1, 1864; mustered out close of war, July 19, 1865.	.....	Cincinnati.

Captains.

John W. Carroll, Nov. 14, 1881.....	H	Private, Co. H, July 7, 1875; Corporal, Oct. 12, 1875; Sergeant, Dec. 12, 1876; 1st Sergeant, April 8, 1877; 2d Lieutenant, April 9, '79; 1st Lieutenant, April 1, 1880; Captain, Nov. 14, 1881; re-commissioned, Dec. 3, 1886	Ohio.....	Cincinnati.
George Brenner, Sept. 12, 1882.....	C	Private, Co. H, July 7, 1875; Sergeant, 1875; Q. M. Sergeant, 1878; 1st Lieutenant, Co. C, April 13, 1881; Captain, Sept. 12, 1882; re-commissioned, Sept. 14, 1887	Ohio.....	Cincinnati.
John Foellger, April 4, 1879	I	Private, Co. A, 3d Battalion, 1871; Sergeant, 1871; Private, Co. A, 1st Regiment, 1873; Corporal, '73; Sergeant, 1874; 1st Sergeant, 1874; 2d Lieutenant, 1874; 1st Lieut., 1875; Captain, Co. E, April 4, 1879; re-commissioned, March 24, 1884.	Ohio..... Germany..	Cincinnati. "
Ernst P. Dietz, June 14, 1884	B	Private, Co. B, 1st Battalion, Dec. 14, 1872; Corporal, Jan. 28, 1874; Sergeant, Co. B, 1st Reg't, Aug. 16, 1876; 1st Sergeant, April 25, 1880; 1st Lieutenant, June 30, '82.	Germany..	Cincinnati.
Charles L. Hunter, Nov. 20, 1884	E	Private, Co. G, 4th Reg't, Sept. 16, 1875; Sergeant, Oct. 20, 1878; discharged Oct. 11, 1880; re-enlisted Oct. 20, 1880; 2d Lieutenant, Sept. 20, 1881; resigned March 20, 1882; Co. transferred to 7th Reg't, and letter changed to B; Co. transferred to 1st Reg't and letter changed to E.....	Ohio.....	Hamilton.
Charles Becht, April 23, 1885	A	Private Co. A, May 25, 1875; Corporal, Jan. 26, 1876; Sergeant, June 15, 1877; 1st Sergeant, Oct. 10, 1877; 1st Lieutenant, April 28, 1879; Captain, Co. D, Feb. 8, 1883; resigned Nov. 1, 1884.....	Ohio.....	Cincinnati.

INFANTRY—FIRST REGIMENT—Continued.

Name, Rank and Date of Commission.	Company.	Service.		Born.	Address.
		In National Guard.	In the Armies of the United States.		
Captains—Continued.					
Thos. W. Thomas, June 4, 1885.....	D	1st Lieutenant, 2d Battery, O. N. G., Nov. 22, 1882; resigned Sept. 19, 1884.	Private Co. F, 2d O. V. I., April 17, 1861; honorably discharged July 31, 1861; Private, Co. C, 5th O. V. C., Oct. 4, 1861; Corporal, Nov. 14, 1861; Sergeant, June 1, 1862; honorably discharged Nov. 29, 1864.	England...	Cincinnati.
First Lieutenants.					
Thos. H. Wright, Nov. 14, 1881	H	Private, "Cincinnati Zouaves," 1867; Corporal, 1868; Sergeant, 1869; Zouaves disbanded; Private Cincinnati Light Guard, 1869; Corporal, 1870; Sergeant, 1871; Private, Co. H, 1st Reg't, 1879; 1st Sergeant, July, 1879; 2d Lieut., April 1, 1880; 1st Lieutenant, Nov. 14, 1881; re-commissioned Dec. 3, 1886.	Joined the Gun Boat service Feb., 1863; discharged for being under age.	Canada	Cincinnati.
Edward H. Lovell, Jan. 24, 1885	I	Private, Co. B, Feb. 10, 1879; 2d Lieut., Co. I, Oct. 12, 1883.....	.....	Ohio.....	Cincinnati.
Harry E. Kennedy, June 4, 1885	A	Private, 2d Battery, O. N. G., Mar. 20, 1884; Corporal, Nov. 4, 1884; Serg't, Jan. 11, 1885; discharged to accept promotion; 1st Lieut. Co. D, June 4, 1885; resigned June 12, 1886; commissioned 1st Lieut. Co. A, with rank from June 4, 1885.....	.....	Canada	Cincinnati.
Robert D. Carver, July 10, 1886.....	D	Private, Battery B, May 21, 1884; 2d Lieutenant, Co. D, 1st Reg't Inf., O. N. G., July 14, 1885 .....	.....	.....	"
Charles E. Littell, March 16, 1887.....	B	Private, Co. B, April 16, 1886 .....	.....	.....	"

Frederick A. Rife, April 16, 1887.....	E	Private, Co. B, 7th Reg't, O. N. G., Nov. 4, 1885; Corporal, July 21, 1886; Sergeant, Nov. 13, 1886; Co. transferred to 1st Reg't, and letter changed to E.....	Ohio.....	Hamilton.
John Proctor, May 14, 1887.....	C	Private, Co. H, 1st Reg't, O. N. G., Aug. 3, 1879; Serg't, Nov. 1880; 2d Lieutenant, Co. C, April, 1882; 1st Lieutenant, Sept. 12, 1882; resigned Feb. 26, 1884.....	England...	Cincinnati.
Fred. Hoffman, May 23, 1885.....	I	Private, Co. I, June 10, 1881; 1st Sergeant, May 12, 1885.....	Ohio.....	"
Russell Pettibone, August 25, 1885 ...	F	.....	.....	"
Harry W. Kent, June 14, 1886.....	H	Private, Co. H, 1st Reg't, Aug. 10, 1880; Corporal, Jan. 19, 1882; 1st Serg't, Oct. 4, 1883; discharged, expiration term of service, Aug. 10, 1885; re-enlisted Aug. 16, 1885.	Ohio.....	Cincinnati.
Patrick R. Otis, Oct. 13, 1886.....	D	Private, Co. H, 1st Reg't, April 1, 1881; Serg't Oct. 4, 1883.....	.....	"
Charles H. Jones, March 16, 1887	B	Private, Co. B, 1st Reg't, Dec. 9, 1884.....	.....	"

INFANTRY—SECOND REGIMENT.

James C. Howe, Feb. 11, 1886.....	Colonel.	Private, Co. K, 7th Reg't, Nov. 9, 1877; Corporal, Dec. 1877; Sergeant, Jan. 1878; 1st Sergeant, July 20, 1878; 2d Lieutenant, May 24, 1879; 1st Lieutenant, July 11, 1881; Captain, Dec., 8 1881.....	Ohio.....	Kenton.
Albert B. Probert, March 17, 1886.....	Lieutenant-Colonel.	Captain, Co. H, May 7, 1885.....	"	Bloomdale.
Hiram F. Collins, Sept. 10, 1883.....	Majors.	Private, Co. K, 7th Reg't, Nov. 9, 1877; 1st Sergeant; 2d Lieutenant, August 20, 1878; 1st Lieutenant, May 24, 1879; Captain, July 11, 1881; Major, Nov. 12, 1881; mustered out June 1, 1883.....	Ohio.....	Kenton.

INFANTRY—SECOND REGIMENT—Continued.

Name, Rank and Date of Commission.	Company.	Service.		Born.	Address.
		In National Guard.	In the Armies of the United States.		
Majors—Continued.					
Bryon M. Clen Dening, Sept. 9, 1887.....	Private, Co. K, 11th Reg't, Feb. 10, 1878; 1st Sergeant, March 15, 1878; mustered out with Co. June 20, 1882; Private Co. K, 7th Reg't, June 4, 1884; Captain, June 10, 1884; Co. transferred to 2d Reg't May 11, 1887.....	.....	Ohio.....	Celina.
First Lieutenant and Adjutant.					
Pearl I. Campbell, March 3, 1887.....	Private, Co. K, 7th Reg't, June 26, 1882; transferred with Co. (letter changed to G) June 6, 1883; Corporal, July 10, 1883; Sergeant, Aug. 2, 1884.....	.....	Ohio.....	Kenton.
First Lieutenant and Quartermaster.					
Fremont M. Lowry, March 25, 1885.....	Private, Co. D, June, 1878; Corporal, May 25, 1880; Sergeant, July 27, 1880; 2d Lieutenant, May 3, 1883; 1st Lieutenant, July 18, 1883; resigned February 2, 1885.....	.....	Ohio.....	Van Wert.
Surgeon.					
Alva L. Paul, July 12, 1887.....	Ohio.....	Ottawa.
Assistant Surgeon.					
Ludwell G. Glenn, July 12, 1884.....	Captain and Asst. Surgeon, 7th Reg't, July 12, 1884; transferred to 2d Reg't June 3, 1887.....	.....	Ohio.....	Kenton.
Chaplain.					
John A. Bower, June 17, 1885.....	Van Wert.

Captains.	E	Simon Price, June 7, 1884.....	Private, Aug. 15, 1877; Corporal, Aug. 20, 1877; Serg't, Sept. 3, 1877; 2d Lieutenant, March 19, 1878; 1st Lieutenant, March 1, 1880; Captain, June 12, 1880; Co. disbanded Aug. 15, 1882; Co. I, organized June 3, 1884; Co. transferred to 2d Reg't May 11, 1887, and letter changed to E.	Private, Co. D, 2d O. V. H. A., June 3, 1863; mustered out at close of war, Aug. 31, 1865.	Ohio.....	Kenton.
2Ex.D.	K	Will H. Dickman, jr., Oct. 18, 1887...	Private, Co. K, 11th Reg't, May 1, 1881; mustered out with Co. June 20, 1882; Private, Co. K, 7th Reg't, June 4, 1884; 1st Sergeant, June 12, 1884; transferred with Co. to 2d Reg't May 11, 1887; 1st Lieut., July 5, 1887; Captain, Oct. 18, 1887	.....	Ohio.....	Celina.
	C	Frank M. Bell, Dec. 24, 1883.....	Private, Co. C, 11th Reg't, Feb. 4, 1875; Corporal, June 16, 1876; Sergeant, August 15, 1877; 1st Sergeant, Co. C, 2d Reg't, Sept. 7, 1878; 1st Lieutenant, Aug. 24, 1883	.....	Ohio.....	Lima.
	I	Hugh E. McClure, Dec. 29, 1884.....	Private, Co. I, 2d Reg't, August 11, 1884.....	.....	" .....	Ottawa.
	G	Willis E. Scott, March 2, 1886.....	Private, Co. K, 7th Reg't, Nov. 9, 1877; 1st Sergeant, May 22, 1880; 2d Lieutenant, Dec. 8, 1881; 1st Lieutenant, Co. G, 2d Reg't, Mar. 6, 1884. ....	.....	Ohio.....	Kenton.
	A D	Charles L. Davis, May 3, 1886..... John Rison, May 18, 1886.....	Captain Co. A, May 3, 1886..... Private, August, 1878; Corporal, August, 1879; Sergeant, May 25, 1880; 1st Sergeant, Aug. 1, 1882; 2d Lieutenant, July 14, 1883; 1st Lieutenant, May 18, 1885.....	.....	" .....	Findlay.
	H	Edward S. Bryant, April 10, 1886 <i>First Lieutenants.</i> Gideon Radabaugh, July 18, 1883	Captain, Co. H, April 10, 1886..... Private, Co. B, 11th Reg't, April, 1877; Sergeant, August, 1881; 1st Sergeant, Oct., 1882; Co. B, 11th Reg't, transferred and made Co. A, 2d Reg't, June 6, 1883.....	.....	Ohio.....	Van Wert. Bloomdale.
	A			.....	Ohio.....	Findlay.

INFANTRY—SECOND REGIMENT—Continued.

Name, Rank and Date of Commission.	Company.	Service.		Born.	Address.
		In National Guard.	In the Armies of the United States.		
<i>First Lieutenants—Continued.</i> Oscar L. Mowen, June 2, 1884.....	C	Private, Co. C, 11th Reg't, Feb. 4, 1875; Corporal, July 19, 1878; Sergeant, Nov. 3, 1880; Co. transferred to 2d Reg't, June 6, 1883; 1st Sergeant, August 12, 1883.....	..... Private, Co. G, 15th O. V. I., April 20, 1861; mustered out August 28, 1861; Private, Co. K, 49th O. V. I., Sept. 5, 1861; mustered out Sept. 9, 1864; 1st Sergeant Co. A, 14th Mo. Vol. Cav., April 2, 1865; 2d Lieutenant, October 10, 1865; mustered out October 19, 1865; Private, Co. G, 11th Infantry, U. S. A., Oct., 23, 1866; Corporal, Dec. 4, 1866; Sergeant, Feb. 12, 1867; discharged Oct. 23, 1869.	Ohio..... Virginia....	Lima. Bloomdale.
William W. Emerson, May 9, 1885....	H	.....	.....	.....	.....
Julius A. Kuert, March 2, 1886.....	G	Private, Co. I, 7th Reg't, Aug. 21, 1877; Corporal, Sept. 12, 1877; Sergeant, April 13, 1878; 1st Sergeant, June 19, 1880; mustered out Oct. 23, 1882; Private, Co. K, 7th Reg't, Jan. 20, 1883; transferred to 2d Reg't, Co. G, June 6, 1883; 2d Lieutenant, March 6, 1884; 1st Lieutenant, Mar. 2, 1886 Private, March 31, 1884..... Private, Co. I, 2d Reg't, O. N. G., Feb. 10, 1884.....	.....	.....	.....
Nathan I. Danner, May 18, 1886..... David C. Long, July 11, 1887	D I	Private, Co. I, 7th Reg't, O. N. G., Sept. 15, 1877; Corporal, June 15, 1878; transferred with Co. (letter changed to E,) June 6, 1883.	.....	Switzerl'd. Ohio.....	Kenton. Van Wert.
Edward Lunney, July 11, 1887.....	E	.....	..... Private, Co. I, 9th U. S. Infantry, Dec. 20, 1881; Corporal, Nov. 19, 1883; Sergeant, Nov. 1, 1884.	Ohio..... New York.	Ottawa. Kenton.

Second Lieutenants.

William S. Johnson, Aug. 10, 1883...	C	Private, Co. C, 11th Reg't, Feb. 4, 1875; transferred to 2d Regiment, June 6, 1883; Corporal, Co. C, Sept. 9, 1880.....	Ohio.....	Lima.
John J. Rampe, June 2, 1884.....	I	Private, Co. I, May 8, 1884.....	Kentucky.	Ottawa.
Tillman Bidlack, June 10, 1884.....	K	Private, Co. K, 11th Reg't, Feb. 11, 1878; Serg't, Mar. 15, 1878; mustered out June 20, 1882; Private, Co. K, 7th Reg't, June 4, 1884; 2d Lieutenant June 10, 1884; transferred to 2d Reg't May 11, 1887...	Ohio.....	Celina.
Wm. B. Hitchcock, jr., April 16, 1885..	B	Private, Co. B, 2d Reg't, Feb. 20, 1880; 1st Sergeant Mar. 1, 1884...	"	Up. Saudusky.
Melville Keltner, April 16, 1885.....	A	Private, Co. A, 2d Reg't, June 16, 1880; Sergeant, July 4, 1882; 1st Sergeant, May 1, 1883	Ohio.....	Findlay.
John J. Ullery, May 9, 1885.	H	2d Lieutenant, Co. H, May 9, 1886	"	Bloomdale.
Louis T. Wynn, July 6, 1885	E	Private, Co. I, 7th Reg't O. N. G.. Aug. 21, 1877; Corporal, August 20, 1878; Sergeant, July 5, 1880; Color Sergeant, July 26, 1881; discharged expiration of term of service, August, 1882; re enlisted June 3, 1884; 1st Sergeant, June 12, 1884; Co. transferred to 2d Reg't May 11, 1887, and letter changed to E	Ohio.....	Kenton.
John B. Born, March 2, 1886.....	G	Private, Co. K, 7th Reg't. Aug. 6, 1879; Corporal, May 22, 1880; Co. K, 7th Regiment, transferred and made Co. G, 2d Reg't, June 6, 1883; Sergeant, July 12, 1884....	.....	Kenton.
Tom M. Smith, March 2, 1886.....	D	Private, July 22, 1884; Corporal, May 30, 1885.	Ohio	Van Wert.

INFANTRY—THIRD REGIMENT.

Name, Rank and Date of Commission.	Company.	Service.		Born.	Address.
		In National Guard.	In the Armies of the United States.		
<i>Colonel.</i> Wm. M. Williamson, April 18, 1883....	Private, "Covington Guard," O. I. M., Nov. 13, 1872; 2d Lieutenant, Sept. 10, 1873; 1st Lieutenant, Co. A, 5th Battalion, Aug. 10, 1875; Captain Co. A, 3d Reg't, Aug. 11, 1876; Major, March 16, 1880; Lieutenant-Colonel, June 23, 1881.	Private, Co. A, 44th O. V. I., Aug. 28, 1861; re-enlisted, Vet. Vol., Co. A, 8th O. V. Cavalry, Jan. 5, 1864; Sergeant, March, 1864; mustered out with Reg't, July 30, 1865.	Ohio.....	Covington.
<i>Lieutenant-Colonel.</i> Jas. E. Shellenberger, April 18, 1883.....	Private, "Covington Guard," O. I. M., Oct. 31, 1872; 1st Lieutenant, Sept. 10, 1873; Captain Co. A, 5th Battalion, Aug. 10, 1875. resigned July 22, 1876; Private, Co. B, 3d Reg't, Jan. 1, 1877; Sergeant, March, 1877; Assistant Surgeon, 3d Reg't, July 27, 1877; Surgeon July 14, 1881.	Musician, Co. B, 94th O. V. I., Aug. 22, 1862; mustered out with Reg't, June 5, 1865.	Ohio.....	Piqua.
<i>Majors.</i> Peter B. Rencb, April 24, 1886.....	Private and Sergeant, Co. C, 87th Battalion, 1863; honorably discharged, 1864; Private, "Covington Guard," O. I. M., Jan. 3, 1874; 2d Lieutenant, Co. A, 5th Battalion, Aug. 6, 1875; 1st Lieutenant, Co. A, 3d Reg't, Aug. 4, 1876; Captain, May 4, 1880.	Private, Co. I, 147th Reg't, O. V. I., May 16, 1864; mustered out with Reg't, Aug. 30, 1864.	Ohio.....	Piqua.
Harvey H. Williams, July 11, 1887	Private, Co. B, 7th Reg't, Jan. 31, 1876; 2d Lieutenant, June 15, 1877; 1st Lieutenant, May 5, 1879; Captain, May 14, 1881; transferred, to 3d Reg't, June 1, 1883; re-commissioned, May 21, 1886.....	.....	Ohio.....	Urbana.

Adjutant.	William H. Gross, July 18, 1881.....	Private, Co. A, 5th Battalion, O. I. M., Aug. 20, 1875; Sergeant, Co. A, 3d Reg't, Aug. 4, 1876; Sergeant-Major, Jan. J, 1877; 2d Lieutenant, Co. A, July 30, 1878; 1st Lieutenant, May 4, 1880; Adjutant, July 28, 1881.....	.....	Ohio.....	Covington.
Quartermaster.	Chas. C. Shuman, July 18, 1883.....	Private, Co. A, 3d Reg't, May 5, 1877; Corporal, Jan. I, 1878; Sergeant, Sept. 2, 1879; 2d Lieutenant, May 4, 1880.....	.....	Ohio.....	Covington.
Surgeon.	John A. Sterrett, May 7, 1883.....	Private, Co. C, 5th Battalion O. I. M., May, 1875; Adjutant, July 27, 1875; resigned July, 1876; Assistant Surgeon, 3d Reg't, Aug. 11, 1881.....	.....	Ohio.....	Troy.
Assistant Surgeon.	Wm. L. Templeton, June 22, 1883.....	Sergeant Band, 3d Reg't, June 24, 1880.....	.....	" .....	Covington.
Chaplain.	Heber A. Ketcham, Dec. 22, 1886 .....	.....	.....	" .....	Urbana.
Captains.	Samuel D. Palmer, April 9, 1881.....	Private, Co. B, 85th O. V. I., June 10, 1862; mustered out with company, Sept. 27, 1862.	.....	" .....	Gettysburg.
	Eli Davis, May 7, 1883.....	Private, Greencastle Guard, Pa. Vol., April 19, 1862; honorably discharged, Sept., 1862; Private, Co. D, 28th Reg't, O. V. M., Jan. 28, 1863; honorably discharged, May 1, 1866; Private, Co. G, 5th Battalion, O. I. M., May 1, 1875; 1st Sergeant, May 5, 1875; 2d Lieutenant, 3d Reg't, Feb. 12, 1876; 1st Lieutenant, Sept. 10, 1880.	.....	Pa	Sidney.
		Private, Co. F, 20th O. V. I., Oct. 14, 1861; honorably discharged, May 1, 1862; Private, 22d O. Ind. Battery, Feb. 12, 1863; Sergeant, July 13, 1863; honorably discharged, June 19, 1865.			

INFANTRY—THIRD REGIMENT—Continued.

Name, Rank and Date of Commission.	Company.	Service.		Born.	Address.
		In National Guard.	In the Armies of the United States.		
Captains—Continued.					
William A. Carson, May 18, 1886	A	Private, Co. A, 5th Battalion, O. I. M., March 13, 1875; Corporal Co. A, 3d Reg't, Aug. 7, 1877; Sergeant, June 29, 1878; 1st Lieutenant, Aug. 19, 1881 .....	.....	Ohio	Covington.
Joseph B. McCoolle, May 19, 1886	E	Private, Co. E, 5th Battalion, O. I. M., June 26, 1876; Sergeant, Co. E, 3d Reg't, 1877; honorably mustered out, 1880; Private and Sergeant Co. E, 3d Reg't, April 13, 1880; 1st Lieutenant, May 4, 1881.....	.....	Ohio	Troy.
Lewis C. Garver, Nov. 11, 1886	C	Captain Co. C, 3d Reg't	Private, Co. K, 34th O. V. I., Aug. 10, 1861; Corporal, Aug. 2, 1862; honorably discharged, Sept. 15, 1864.	Maryland.	Greenville.
Harry H. Hunter, July 19, 1887	F	Private, Co. F, 3d Reg't, Aug. 10, 1883; Corporal, Aug. 21, 1884; 2d Lieutenant, Aug. 17, 1885; 1st Lieutenant, March 31, 1886 .....	.....	Maryland.	Piqua.
William H. Eccles, July 30, 1887	B	Private, Co. B, 7th Reg't, Jan. 28, 1876; honorably discharged, Jan. 28, 1881; Private, Co. B, 7th Reg't, April 23, 1881; Sergeant, May 16, 1881; 2d Lieutenant, Feb. 26, 1883; transferred to 3d Reg't, Jan. 1, 1883; 1st Lieut. Sept. 25, 1883.....	.....	Ohio	Urbana.
Joseph Wilkinson, Aug. 1, 1887	H	.....	.....	.....	Bellefontaine.

<i>First Lieutenants.</i>	D	George W. Bland, May 18, 1886.....	Private, Co. D, 3d Reg't, Aug. 25, 1881; Sergeant, Sept. 1, 1881; 1st Sergeant, June 27, 1881; 2d Lieutenant, Jan. 1, 1884.	Private, Co. C, 99th O. V. I., July 28, 1862; mustered out with Reg't, June 26, 1865.	Ohio.....	Sidney.
	A	James D. Rike, May 18, 1886	Private, Covington Guard. O. I. M., Aug. 28, 1873; honorably discharged; Private, Co. A, 3d Reg't, July 31, 1877; Corporal, July 29, 1878; Sergeant, Aug. 22, 1881; 2d Lieutenant, Sept. 1, 1883.		Ohio.....	Covington.
	G	Harvey F. Dershem, Oct. 16, 1886.....	Private, Co. G, 3d Reg't, April 1, 1881; 2d Lieut., June 2, 1884		Ohio.....	Gettysburg.
	C	William H. Webb, Nov. 11, 1886	Private Co. C, 3d Reg't, April 12, 1881; Corporal, 1882; Sergeant, Aug. 8, 1883; 2d Lieutenant, Dec. 26, 1885		Ohio.....	Greenville.
	H	Charles Sherman, June 3, 1887	Private Co. E, 2d Reg't, Dec. 10, 1882; Corporal, Aug. 6, 1883, 1st Sergeant, 1884; Co. transferred to 3d Reg't, and letter changed to H.....		Ohio.....	Bellefontaine.
	F	Harry Z. McIntire, July 19, 1887	Private, Co. F, 3d Reg't, July 7, 1882; Corporal, Aug. 21, 1884; 2d Lieutenant, March 31, 1886		Ohio.....	Piqua.
	B	Charles O. Taylor, July 30, 1887	Private, Co. B, 7th Reg't, June 6, 1882; transferred to 3d Reg't, June 1, 1883; 2d Lieutenant, Sept. 25, 1883		Ohio.....	Urbana.
	E	John E. Heller, Aug. 19, 1881	Private, Co. E, 3d Reg't, Aug. 15, 1879; honorably mustered out, 1880; Private and Sergeant, Co. E, 3d Reg't, April 13, 1880		Ohio.....	Troy.
	A	James R. Clark, May 18, 1886.....	Private, Co. A, 3d Reg't, Aug. 8, 1882; Corporal July 26, 1884; 1st Sergeant, July 24, 1885		Ohio.....	Covington.
	D	Elmer M. Honnel, May 19, 1886	Private, Co. D, 3d Reg't, Aug. 25, 1881; Sergeant, Dec. 8, 1881; 1st Sergeant, Aug. 25, 1885		Ohio.....	Sidney.
	C	William H. Dunker, Dec. 21, 1886.....	Private, Co. C, 3d Reg't, Jan. 4, 1882; Sergeant, May, 1886.	Private Co. I, 125th O. V. I., June 24, 1863; Corporal, Sept. 12, 1863; discharged, Sept. 25, 1865, close of the war.	Ohio..... "	Greenville.

INFANTRY—THIRD REGIMENT—Continued.

Name, Rank and Date of Commission.	Company.	Service.		Born.	Address.
		In National Guard.	In the Armies of the United States.		
Second Lieutenants—Continued.					
William H. Kemper, June 3, 1887	H	.....	.....	.....	Bellefontaine.
Henry W. Westfall, July 19, 1887	F	Private, Co. F, 3d Reg't, March 24, 1884; Corporal, Jan. 18, 1886; Sergeant, May 11, 1886; 1st Sergeant, March 28, 1887.....	.....	Ohio	Piqua.
Oscar S. Robinson, July 30, 1887.....	B	Private, Co. B, 3d Reg't, May 19, 1887.....	.....	New York.	Urbana.

INFANTRY—FIFTH REGIMENT.

<i>Colonel.</i>					
Fred. H. Flick, June 16, 1884.....	.....	Private, Cleveland Light Artillery, April 3, 1873; 1st Lieutenant, Nov. 10, 1875; re-commissioned 1st Lieutenant, June 6, 1878; mustered out expiration term of service.	Private, Battery B, 1st O. L. A., June 13, 1863; honorably discharged, July 22, 1865.	Ohio	Cleveland.
<i>Lieutenant-Colonel.</i>					
John W. Gibbons, Aug. 30, 1887.....	.....	Private, Co. D, 29th Reg't, O. N. G., July 20, 1863; mustered out May 2, 1864; Major 5th Regiment, Aug. 4, 1884.	Corporal, Co. D, 150th O. V. I., May 2, 1864; honorably discharged Aug. 23, 1864.	Ohio	Cleveland.
<i>First Lieutenant and Adjutant.</i>					
Herman Mayer, June 27, 1884.....	.....	1st Lieutenant and Adjutant, 5th Reg't, May 26, 1882; resigned Nov. 30, 1883.	Private, Co. B, 32d O. V. I., March 1, 1863; honorably discharged at close of war, July 25, 1865; Private, Co. H, 5th U. S. I., May 16, 1866; Corporal; Sergeant; discharged expiration term of service, May 16, 1869.	Germany..	Cleveland.
<i>First Lieutenant and Quartermaster.</i>					
Charles H. Flick, July 25, 1885 .....	.....	1st Lieutenant and Q. M., 5th Reg't, July 25, 1885.	Private, Co. H, 150th P. V. I., Aug. 20, 1862; Corporal, Dec., 1863; mustered out June 28, 1865.	Ohio	Cleveland.

<i>Surgeon.</i> Franklin H. Clark, July 20, 1886..... <i>Assistant Surgeon.</i> Carl G. Weber, July 11, 1887.....	Major and Surgeon, 5th Reg't, July 20, 1886.....	.....	Ohio.....	Cleveland.
<i>Chaplain.</i> John Mitchell, July 9, 1884.....	.....	.....	Ohio.....	Norwalk.
<i>Captains.</i> James P. Woodworth, Dec. 10, 1878.... Newell J. Fuller, Aug. 18, 1882.....	Captain, Co. I, 10th Reg't, Dec. 10, 1878; re-commissioned Captain, Co. E, 5th Reg't, Dec. 24, 1883. 2d Lieutenant, Co. I, 3d Reg't, O. M., Oct. 20, 1863; Private, Co. K, 15th Reg't, Sept. 26, 1877; 2d Lieu- tenant, Nov. 23, 1878; 1st Lieu- tenant, "Berea Light Guard," (unattached) May 3, 1881; as- signed to 5th Reg't, 1881; Captain Aug. 18, 1882; re-commissioned, Oct. 24, 1887. Private "Cleveland Grays," Mar. 4, 1879, to Aug. 20, 1882; Captain, Co. A, 5th Reg't, Sept. 7, 1882; re-commissioned, Oct. 24, 1887.	E D	Ohio..... Ohio.....	Geneva. Berea.
Llewellyn R. Davis, Sept. 7, 1882.....	Private, Co. A, 7th O. V. I., April 22, 1861; Corporal, April 24, 1861; Sergeant, Sept. 5, 1861; 2d Lieu- tenant, Co. D, June 14, 1862; 1st Lieutenant, Co. E, December 4, 1862; Captain Co. C, Feb. 25, 1863; mustered out Dec. 19, 1864; Lieu- tenant-Colonel, 187th O. V. I., March 2, 1865; mustered out with Reg't, Jan. 2, 1866. Private, Co. H, 7th O. V. I., mus- tered out Sept. 1, 1863.	A	England...	Cleveland.
H. W. Crittenden, June 5, 1884.....	Private, Co. C, April 16, 1884.....	C	Ohio	Burton.

INFANTRY—FIFTH REGIMENT—Continued.

Name, Rank and Date of Commission.	Company.	Service.		Born.	Address.
		In National Guard.	In the Armies of the United States.		
Captains—Continued.					
Cortland L. Kennan, Dec. 30, 1885.....	G	Private, Co. G, 16th Reg't, Aug. 6, 1877; 1st Sergeant, Aug. 9, 1877; 2d Lieutenant, May 1, 1879; 1st Lieutenant, May 13, 1882; Co. transferred to 5th Reg't, May 11, 1887.....	..... Private, Co. H, 29th O. V. I. in 1863; private Co. H, 150th O. V. I., May 3, 1864; mustered out Aug. 20, 1864.	Ohio..... England...	Norwalk. Cleveland.
Daniel Fovargue, March 11, 1886	F	Private, Co. C, 15th Reg't, 1876; Captain, July 17, 1877; mustered out with Company, 1881; 1st Lieutenant, Co. F., 5th Reg't, April 28th, 1885.	.....	.....	Cleveland.
Edmund M. Whitney, Feb. 14, 1887..	B	.....	.....	.....	.....
James A. Freed, Jr., March 27, 1887..	H	Private, Co. C, 8th Reg't, June 27, 1882; 1st Sergeant, May 19, 1883; 1st Lieutenant, Jan. 10, 1885; Co. transferred to 5th Reg't, May 11, 1887, and letter changed to H.....	.....	Ohio.....	Youngstown.
First Lieutenants.					
John J. Dalton, Nov. 6, 1883.....	A	Private, Co. D, 15th Reg't, June, 1878; Corporal, Sept. 29, 1879; Sergeant, Feb. 27, 1880; transferred with Co. to 5th Reg't, as Co. A, in 1880; 1st Sergeant, March 19, 1881; 2d Lieutenant, Sept. 29, 1881; discharged, 1881, with Co.; Private, Co. A (new), 5th Reg't, Aug. 24, 1882; 2d Lieutenant, Sept. 7, 1882 .....	..... Private, Co. E, 12th O. V. C., Oct. 24, 1863; discharged Nov. 14, '65..	New York Ohio.....	Cleveland. Burton. Cleveland.
Lester Crittenden, Nov. 24, 1885	C	Private, Co. C, April 17, 1884; 1st Sergeant, June 1, 1884.	.....	.....	.....
Charles E. Marcellus, Dec. 10, 1885....	B	.....	.....	.....	.....

John E. Burnham, Dec. 30, 1885.....	G	Private, Co. G, 16th Reg't, Aug. 6, 1877; Sergeant, Sept. 14, 1877; 1st Sergeant, May 31, 1879; Co. transferred to 5th Reg't, May 11, 1887..	Private, Co. K, 40th Mass. V. I., Aug. 11, 1862; honorably discharged, June 16, 1865.	Mass	Norwalk.
Charles X. Zimmermann, Feb. 14, 1887.	F	Private, Co. F, May 8, 1884; Corporal, June 4, 1885; Sergeant, Sept. 19, 1885; 1st Sergeant, March 6, 1886 .....	.....	Ohio	Cleveland.
John G. James, May 31, 1887.....	H	Private, Co. C, 8th Reg't, O.N.G., June 19, 1883; Corporal, May 5, 1885; Sergeant, July 20, 1885; Co. transferred to 5th Reg't, and letter changed to H, May 11, 1887..	.....	England...	Youngstown.
Edwin Z. Scoville, July 11, 1887.....	E	Private, Oct. 20, 1878; Corporal, Sept. 2, 1879; Sergeant, April 25, 1882; 1st Sergeant, July 14, 1882; honorably discharged, Oct. 30, 1883; re-enlisted Nov. 18, 1883; 1st Sergeant, Dec. 16, 1884; 2d Lieutenant, July 17, 1885.....	.....	Ohio	Geneva.
<i>Second Lieutenants.</i>					
Benj. L. Thomas, Jan. 10, 1885	H	Private, Co. C, 8th Reg't, Sept. 18, 1880; Corporal, Nov. 23, 1881; Sergeant, May 19, 1883; Co. transferred to 5th Reg't, May 11, 1887, and letter changed to H.....	.....	S. Wales...	Youngstown.
Henry L. Kennan, March 15, 1886.....	G	Private, Co. G, 16th Reg't, Aug. 6, 1877; Corporal, Nov. 20, 1878; Sergeant, May 15, 1879; Serg't-Major, Sept. 5, 1885; Co. transferred to 5th Reg't, May 11, 1887.	.....	Ohio	Norwalk.
George A. Bailey, April 8, 1886.....	A	Private, Co. I, 15th Reg't, 1877; Corporal, 1878; Company disbanded in 1881; Private, Co. D, 15th Reg't, 1881; Corporal, 1882; transferred with Co. to 5th Reg't, as Co. A; 1st Sergeant, 1884 .....	.....	Ohio	Cleveland.
Milton W. Richards, April 24, 1886...	D	Private, Co. K, 15th Reg't, Sept. 26, 1877; Sergeant, Jan. 3, 1878; transferred with Co. to 5th Reg't, as Co. D, 1881; Sergeant-Major, August 19, 1881.....	.....	Ohio	Berea.
Orin D. Brainard, July 20, 1886.....	C	Private, April 17, 1884; Sergeant, Dec. 1, 1885 .....	.....	" .....	Burton.

INFANTRY—FIFTH REGIMENT—Continued.

Name, Rank and Date of Commission.	Company.	Service.		Born.	Address.
		In National Guard.	In the Armies of the United States.		
Second Lieutenants—Continued.					
Ernest S. Trayte, July 11, 1887	F	.....	.....	.....	Cleveland.
William H. Munger, July 11, 1887.....	E	.....	.....	.....	Geneva.
Ernest F. Cook, July 30, 1887.....	B	.....	.....	.....	Cleveland.
INFANTRY—SIXTH REGIMENT.					
Colonel.					
John C. Entrekin, June 23, 1876.....	.....	1st Lieutenant, Co. A, Sill Guards, June 6, 1873; Captain, Co. A, March 31, 1875; Colonel, June 23, 1876; re-commissioned Oct. 2, '78; re-commissioned Sept. 25, 1883.	Private, Co. A, 114th Reg't, O. V. I., August 13, 1862; mustered out June 8, 1865, close of war, (wounded).	Ohio.....	Chillicothe.
Lieutenant-Colonel.					
Baldwin H. Millikan, May 12, 1885....	.....	2d Lieutenant, Co. B, 6th Reg't, April 28, 1875; re-commissioned April 27, 1876; Captain, Co. B, Nov. 16, 1876; re-commissioned Dec. 2, 1881; Major, July 19, 1884.	Private, Co. C, 114th Reg't, O. V. I., Aug. 20, 1862; mustered out June 22, 1865, under G. O. W. D.	Indiana ...	Washingt'n C. H.
Majors.					
George Titus, Jan. 27, 1886.....	....	Captain, Co. I, 6th Reg't, August 27, 1881 .....	.....	Ohio	Pomeroy.
Arthur L. Hamilton, July 9, 1886 .....	.....	Private, Co. A, 6th Reg't, June 7, 1873; 1st Corporal, Dec. 5, 1873; 5th Serg't, Feb. 9, 1874; 1st Sergeant, Aug. 20, 1876; 2d Lieut., Aug. 20, 1877; 1st Lieutenant, Feb. 4, 1878; Captain, Nov. 11, 1879; resigned, Nov. 14, 1884; com'd 1st Lieutenant and Adjutant, January 23, 1885.....	.....	Ohio	Chillicothe.

Adjutant.	F. Marion Cline, Aug. 27, 1881.....	Private, Co. I, 6th Reg't, O. N. G., Aug. 17, 1881; 1st Lieutenant, Aug. 27, 1881; appointed Adjutant, Oct. 16, 1886.	Private, Co. H, 73d O. V. I., Dec. 5, 1861; discharged November 26, 1862, for injuries received Fredericksburg campaign. Private, Co. C, 4th Battalion, O. V. C., July 6, 1863; discharged March 12, '63. Private, Co. E, 174th O. V. I., Oct. 25, 1864; transferred to Co. G, 181st O. V. I.; discharged July 14, 1865.	Ohio.....	Pomeroy.
Quartermaster.	Orin F. Thompson, July 15, 1882	Private, Co. D, 6th Reg't, Oct. 4, 1875; 2d Sergeant, Dec. 25, 1875; 2d Lieutenant, June 12, 1876; Captain, Co. F, Oct. 7, 1878; resigned June 5, 1882; 1st Lieutenant and Q. M., July 15, 1882; re-commissioned, Nov. 11, 1887.....	.....	Ohio.....	Circleville.
Surgeon.	John C. Bishop, Jan. 1, 1884.....	.....	Enlisted as Private, Co. C, 9th Reg't, W. Va. V. I., Nov. 1, 1862; mustered into service Feb. 9, 1863; 1st Lieutenant, Co. I, 1st Vet. W. Va. V. I.—(5th and 9th Reg'ts consolidated), October 16, 1864.	Ohio.....	Middleport.
Assistant Surgeon.	Charles O. Dunlap, Jan. 23, 1885.....	Private, Co. G, 6th Reg't, August 16, 1881; 3d Sergeant, June 12, 1883; Captain, Co. G, Aug. 15, 1883	.....	Michigan.	McArthur.
Chaplain.	Charles F. Dean, Aug. 3, 1882.....	Re-commissioned Aug. 3, 1887.	Private, Co. K, 150th O. V. I., May 2, 1864; mustered out August 23, 1864.....	Mass.....	Washingt'n C.H.
Captains.	Daniel R. Shriver, Aug. 15, 1883.....	C Company transferred from 13th Reg't to 6th Reg't, May 11, 1887.	Private, Co. G, 1st O. V. I., April 17, 1861; mustered out, July 31, 1861; Private, Co. B, 33d O. V. I., Oct. 11, 1861; Corporal, Oct. 24, 1861; Sergeant, March, 17, 1862; 1st Sergeant, Feb. 16, 1863; First Lieutenant, Jan. 28, 1865; Capt., May 18, 1865; mustered out, Apr. 13, 1865.	Ohio	Manchester.

INFANTRY—SIXTH REGIMENT—Continued.

Name, Rank and Date of Commission.	Company.	Service.		Born.	Address.
		In National Guard.	In the Armies of the United States.		
Captains—Continued.					
Homer C. Jones, Aug. 5, 1884.....	G	.....	2d Lieutenant, Co. B. 18th Reg't, O. V. I., August 10, 1861; 1st Lieut., Feb. 8, 1863; Ass't Signal Officer on Staff of General Thomas J. Wood; Acting Adjutant; A. D. C. to Gen. Negley; A. D. C. and Signal Officer on Gen. Thomas' Staff; Chief Signal Officer of 14th Army Corps; Captain, April 14, 1863; mustered out Nov. 9, 1864.	Ohio.....	McArthur.
John W. Ogden, Dec. 10, 1884.....	A	Private, Co. A, 6th Reg't, O. N. G., June 7, 1873; Corporal, July 1, 1877; 1st Corporal, July 7, 1878; 1st Sergeant, January 1, 1880; 2d Lieutenant, Jan. 16, 1882.....	.....	Ohio.....	Chillicothe.
Lee O. Anderson, May 28, 1885.....	F	Private, Co. F, 6th Reg't, O. N. G., Oct. 15, 1875; Sergeant, July 12, 1879; 1st Sergeant, June 5, 1881; 1st Lieutenant, Nov. 14, 1882.....	.....	Ohio.....	Circleville.
William C. Bostwick, July 14, 1885...	E	Company transferred from 7th Reg't to 6th Reg't, May 11, 1887.	Private, Co. G, 113th O. V. I., Aug. 13, 1862; discharged at expiration of term of service, July 6, 1865.	"	Mt. Sterling.
Jno. W. McLean, April 17, 1886.....	I	2d Lieutenant, Co. F, 6th Reg't, O. N. G., Aug. 17, 1881.....	.....	Ohio.....	Middleport.
Belden V. Hicks, May 10, 1887.....	D	Private, Co. D, 6th Reg't, April 15, 1878; Sergeant, Dec. 12, 1881; re-enlisted Aug. 12, 1883; Q. M. Sergeant, 6th Reg't, Aug. 12, 1883; 1st Sergeant, Co. D, Aug. 1, 1885; discharged Dec. 2, 1886.....	.....	Ohio.....	Ironton.

John P. Maynard, June 22, 1887	B	Private, Co. B, 6th Reg't, March 12, 1876; Corporal, Aug., 1877; Sergeant, July, 1878; discharged March 12, 1881; re-enlisted Mar. 12, 1881; 1st Lieutenant, Sept. 1, 1884; resigned June 7, 1886.....	Ohio.....	Washingt'n C. H.
<i>First Lieutenants.</i>				
Charles W. Henry, March 13, 1885.....	D	Private, Co. D, 6th Reg't, May 18, 1882.....	.....	Ironton.
Leonard Trieber, Dec. 10, 1884..	A	Private, Co. A, 6th Reg't, O. N. G., Aug. 20, 1878; Corporal, Dec. 20, 1879; Sergeant, March 4, 1881.....	Ohio	Chillicothe.
Lark Moon, February 5, 1887.	E	First Sergeant, Co. E, 7th Reg't, July 11, 1885; Second Lieutenant, July 21, 1886; Co. transferred to 6th Reg't, May 11, 1887.....	.....
James B. Hysell, April 27, 1887	I	Private, Co. I, 6th Reg't, O. N. G., Aug. 17, 1881; Corporal, Sept. 9, 1883; 2d Lieut., April 13, 1886.	.....	Mt. Sterling.
John C. Haffler, June 6, 1887.....	B	Private, Co. B, 6th Reg't, O. N. G., June 30, 1880; Corporal, May 1, 1882; 1st Sergeant, Aug. 22, 1884; mustered out June 27, 1885; Private, Co. B, 6th Reg't, June 1, 1885; 2d Lieut., June 19, 1886.....	Ohio	Middleport.
Samuel J. Irwin, July 21, 1887	F	.....	.....
John A. Murray, Aug. 3, 1887.....	C	First Sergeant, Co. C, 13th Reg't, Aug. 9, 1883; 2d Lieutenant, May 22, 1884; 1st Lieutenant, Dec. 16, 1885; resigned Sept. 11, 1886; Co. transferred to 6th Reg't, May 11, 1887.....	Ohio	Washingt'n C. H.
<i>Second Lieutenants.</i>				Circleville.
James R. Cowgill, March 25, 1884	G	Private, August 16, 1881; 2d Sergeant, Sept. 13, 1881; First Sergeant, April 1, 1882.	Scotland. Ohio.....	Manchester. McArthur.
Adam Maurer, Dec. 10, 1884.....	A	.....	.....	Chillicothe.
John W. Lowe, May 28, 1885... ..	F	Private, Dec. 16, 1882; Corporal, May 1, 1884.....	Ohio....	Circleville.
Joseph K. Wilson, Aug. 2, 1885.....	D	Private, Co. D, 6th Reg't, August 12, 1878	"	Ironton.
Dudley B. Phillips, Dec. 16, 1885.....	C	Corporal, Aug. 9, 1883; 1st Sergeant, Feb. 11, 1885; Co. transferred from 13th Reg't to 6th Reg't, May 11, 1887.....	Ohio	Manchester.

INFANTRY—SIXTH REGIMENT—Continued.

Name, Rank and Date of Commission.	Company.	Service.		Born.	Address.
		In National Guard.	In the Armies of the United States.		
<i>Second Lieutenants—Continued.</i>					
William A. Giles, April 27, 1887.....	I	Private, Co. I, 6th Reg't, August, 1881; discharged Sept. 29, 1886; re-enlisted August 18, 1886; Corporal, 1886.....	.....	.....	Middleport.
Alfred N. Van Deman, June 6, 1887..	B	Private, Co. B, 6th Reg't, June 22, 1885; First Sergeant, June 19, 1886.....	.....	Ohio	Washing'tn C.H.
Charles Toops, Aug. 9, 1887	E	Enlisted in Co. E as a musician July 11, 1885; Corporal, June, 1887; Sergeant, July 30, 1887.....	.....	Ohio	Cook Station.

INFANTRY—EIGHTH REGIMENT.

<i>Colonel.</i>					
Arthur L. Conger, July 27, 1881 .....	.....	Re-commissioned, July 27, 1886...	2d Lieutenant, 115th Reg't, O. V. I., July 24, 1862; 1st Lieutenant, Sept. 22, 1862; mustered out July 2, 1865.	Ohio	Akron.
<i>Lieutenant-Colonel.</i>					
George R. Gyger, July 9, 1885.....	.....	Captain, Co. A, O. I. M., Dec. 4, 1874; Major, 8th Reg't, Aug. 27, 1877.	2d Lieutenant, Co. G, 179th Reg't, O. V. I., Sept. 27, 1864; mustered out close of war, June 17, 1865.	Pa	Alliance.
<i>Majors.</i>					
Curtis V. Hard, Aug. 19, 1885.....	.....	2d Lieutenant, Co. D, 8th Reg't, Feb. 11, 1881; 1st Lieutenant, May 30, 1883.	Private, Co. K, 135th O. V. I., May 2, 1864; mustered out Sept. 1, 1864.	Ohio	Wooster.
Emmett F. Taggart, June 22, 1887.....	.....	Sergeant, Co. A, 9th Reg't, Dec. 13, 1875; 1st Lieutenant, April 2, 1877; 1st Lieutenant, Co. B, 8th Reg't, 1878; 1st Lieutenant and Adjutant, 8th Reg't, Sept. 5, 1881.	Private, Co. I, 102d O. V. I., Feb. 23, 1863; honorably discharged at close of war, May 30, 1865.	Ohio	Akron.

First Lieutenant and Adjutant.	Albert A. Bartlett, Aug. 6, 1887	Private, Co. A, 68th Reg't, N. Y. S. Militia, July 27, 1858, to Aug. 12, 1861; Sergt.-Major, 9th Reg't, O. N. G., Sept. 14, 1877; Sergt.-Major, 8th Reg't, Sept. 12, 1878; 2d Lieut. Co. B, 8th Reg't, June 2, 1884; 1st Lieut., Jan. 9, 1885; resigned, Oct. 28, 1885; Sergeant-Major, 8th Reg't, July 20, 1886.	Private, Co. A, 49th Reg't, N. Y. V., to April 6, 1863; discharged for wounds (loss of arm).	New York.	Akron.
First Lieutenant and Quartermaster.	James Taggart, Aug. 12, 1886	Corporal, Co. A, 52d Reg't, O. V. M., May, 1863; Sergeant, Feb. 8, 1864; Private, Co. D, 8th Reg't, O. N. G., Jan. 15, 1881; Q. M. Sergeant, April 24, 1882	Private, Co. I, 64th Illinois Vol. Inf., Dec., 1863; honorably discharged at close of war, July, '65.	Ohio	Wooster.
Surgeon.	Albert C. Belden, Aug. 2, 1881	Private, Co. B, 11th Reg't, June 15, 1863; honorably discharged, May 1, 1866.	Corporal, Co. A, 88th O. V. I., June 6, 1862; yeoman U. S. Gun boat, Brilliant, No. 18, February 1, 1864; honorably discharged, Feb. 7, 1865.	New York.	Akron.
Assistant Surgeon.	Emmer C. Farquhar, Aug. 23, 1886	Chaplain, 9th Reg't, May 3, 1877; Chaplain, 8th Reg't, Sept. 9, 1878..		Ohio	Wadsworth.
Chaplain.	John C. Kauffman, May 3, 1877	Re-commissioned, July 13, 1887; Co. transferred from 17th Reg't to 8th Reg't, and letter changed to C, May 11, 1887			Polk.
Captains.	Wm. H. Ambrose, June 22, 1882	Private, Co. G, 8th Reg't, Oct. 1, 1878; Sergeant, Co. F, July 25, 1881; 2d Lieutenant, March 25, 1882; 1st Lieutenant, July 29, '82..		Ohio	Beach City.
	Cyrus Zimmerman, Aug. 7, 1885	Private, Co. A, 8th Reg't, April 30, 1884; Sergeant-Major, June 20, 1884		Ohio	Bucyrus.
	Edward Vollrath, June 30, 1883	Private, Co. B, 8th Reg't, Nov. 1, 1885; 1st Lieutenant, Nov. 3, '85..		"	Akron.
	Charles W. F. Dick, June 30, 1886				

INFANTRY—EIGHTH REGIMENT—Continued.

Name, Rank and Date of Commission.	Company.	Service.		Born.	Address.
		In National Guard.	In the Armies of the United States.		
Captains—Continued.					
Horace N. Clemens, Nov. 23, 1886....	D	Private, Co. D, 8th Reg't, Jan. 15, 1881; Sergeant, Feb. 28, 1881; 1st Sergeant, May 30, 1883; discharged, Feb. 22, 1886, by reason of expiration of term of service; re-enlisted, April 16, 1886; 1st Sergeant, May 14, 1886; 2d Lieutenant, July 29, 1886.....	.....	Ohio	Wooster.
Samuel M. Hoon, Nov. 25, 1882.....	E	Private, Co. A, 5th Iowa N. G., July 17, 1874; Sergeant, Aug. 17, 1874; honorably discharged, Aug. 17, 1877; Private, Co. E, 10th Reg't, O. N. G., May 17, 1878; Corporal, Aug. 16, 1878; Sergeant, Aug. 22, 1879; 1st Sergeant, Co. E, 8th Reg't, July 1, 1881; 2d Lieutenant, Sept. 19, 1881; 1st Lieutenant, Nov. 25, 1882.....	.....	.....	.....
Jacob H. Rickert, May 28, 1887	G	Corporal, Co. D, 9th Reg't, O. N. G., June 3, 1876; transferred with Co. to 8th Reg't (letter changed to H), Sept., 1878; Sergeant, 1878; 2d Lieut., May 1, 1880; 1st Lieut., Co. G, Feb. 17, 1883; resigned, April 28, 1884.	..... Private, Co. F, 166th Reg't, O. V. I., May 2, 1864; mustered out, Sept. 9, 1864.	Pa Pa	E. Palestine. Wadsworth.
Balera J. Aurand, June 2, 1887	I	.....	.....	.....	Galion.
First Lieutenants.					
John Geisinger, May 15, 1884.....	G	Private, Co. G, Sept. 15, 1878; Corporal, Oct. 12, 1880; Sergeant, March 18, 1881; 2d Lieutenant, April 3, 1883.....	.....	.....	Wadsworth.

Robert Cameron, Sept. 10, 1885.....	D	Private, Co. D, 8th Reg't, Jan. 15, 1881; Sergeant, Feb. 28, 1881; 2d Lieutenant, June 8, 1883.....	Scotland...	Wooster.
James Ullum, Nov. 2, 1885... ..	I	Private, Co. E, 14th Reg't, Aug. 12, 1878; discharged Jan. 14, 1885; 2d Lieutenant, Co. I, 8th Reg't, July 25, 1885.....	Ohio	Galion.
Fred. C. Bryan, June 30, 1886.....	B	Private, Co. B, July 31, 1883; 1st Sergeant, August 12, 1885.....	"	Akron.
Charles M. Rose, July 26, 1886.....	F	Private, Co. F, July 18, 1883; Corporal, June 25, 1885.....	"	Beach City.
Adam Wurzauf, Feb. 23, 1887.....	A	Private, Co. A, April 22, 1884; Corporal, Aug. 5, 1884; 2d Lieutenant, Jan. 1, 1885.....	Austria..... Pa.....	Bucyrus. Nankin.
David S. Youngblood, May 30, 1887...	C	Private, Co. D, 17th Reg't, June, 1879; 2d Lieutenant, April 18, 1883; Co. transferred to 8th Reg't, and letter changed to C. ....	.....	E. Palestine.
Solomon H. Maneval, June 2, 1887 ...	E	.....	.....	.....
Edwin T. Siegfried, July 6, 1885.....	G	Private, June 3, 1876; Sergeant, June 2, 1883; 1st Sergeant, Aug. 13, 1883	Pa	Wadsworth.
Ira I. Morrison, Nov. 6, 1885.....	B	Private, Co. B, 8th Reg't, Nov. 3, 1885 .....	.....	Akron.
Forbes Alcock, Nov. 23, 1886.....	D	Private, Co. D, 8th Reg't, May 5, 1882; Corporal, June 22, 1883; Sergeant, Feb. 22, 1886; 1st Sergeant, July 29, 1886.....	Scotland...	Wooster.
Will F. Mader, Feb. 23, 1887.....	A	Private, Co. A, 8th Reg't, O.N.G., April 22, 1884; Corporal, April 27, 1886.....	Ohio	Bucyrus. Galion.
Charles Caldwell, June 2, 1887	I	Private, Co. C, 8th Reg't, June 10, 1882; Corporal, Aug. 20, 1882; 1st Sergeant, July 26, 1886.....	.....	.....
Edward M. Wicks, July 13, 1887.....	C	Private, Co. C, 18th Batt., O.N.G., July 21, 1863; discharged May 1, 1866; Private, Co. E, 10th Reg't, June 8, 1878; 1st Sergeant, June 8, 1878; Hospital Steward, 8th Reg't, Aug. 8, 1881; discharged June 8, 1883.	Ohio	Polk. E. Palestine.
Alfred A. Bushong, July 25, 1887.....	E	.....	.....	.....

INFANTRY--NINTH BATTALION.

Name, Rank and Date of Commission.	Company.	Service.		Born.	Address.
		In National Guard.	In the Armies of the United States.		
Major.					
Benjamin F. Paype, Aug. 31, 1886.....	.....	2d Lieutenant, "Palmer Guards," Jan. 21, 1879; 1st Lieut. July 10, 1880; Captain, Co. B, 9th Battalion, Dec. 20, 1880; re-commissioned, Feb. 3, 1886 .....	.....	Kentucky.	Columbus.
First Lieutenant and Quartermaster.					
John H. Bellair, April 27, 1887.....	.....	Private, "Governor's Guards," April 14, 1885; discharged, to accept promotion .....	.....	Indiana....	Columbus.
Chaplain.					
Jesse Henderson, May 14, 1887 .....	.....	.....	3d Reg't Kansas colored troops.....	.....	Springfield.
Captains.					
Harry H. Robinson, July 29, 1886.....	C	Private, Co. C, June 30, 1884; Corporal, July 10, 1884; Sergeant, Dec. 22, 1884.....	.....	Kentucky.	Xenia.
Job B. Johnstone, Nov. 17, 1886.....	B	First Sergeant, "Palmer Light Guard," March, 1878; Adjutant, 9th Battalion, Aug. 4, 1882.....	.....	Ohio	Columbus.
First Lieutenants.					
James Howard, July 1, 1884	C	Private, Co. C, June 30, 1884.....	.....	Tennessee.	Xenia.
William H. Melton, Feb. 3, 1885.....	B	Corporal, Oct. 20, 1879; 1st Sergeant, June 25, 1883; Q. M. Sergeant, April 2, 1883 .....	.....	N. C	Columbus.
John H. Stewart, July 22, 1887.....	A	Private, "Duquesne Blues," Sept. 22, 1876; Sergt.-Major, 9th Battalion, July 26, 1885.	Sergeant, Co. B, 5th U. S. C. T., June, 1863; Drum Major, Aug. 29, 1865; mustered out, Oct. 8, '65.	Ohio	Springfield.
Second Lieutenants.					
William Townsend, April 3, 1883.....	B	.....	.....	.....	Columbus.
Jeff. Foster, July 1, 1884.....	C	Private, June 30, 1884 .....	.....	Kentucky.	Xenia.

William H. Sherburne, June 7, 1887..	A	Private, "Duquesne Blues," Jan. 26, 1876; Corporal, June, 1876; Sergeant, December 22, 1877; discharged Jan. 26, 1881; re-enlisted Feb. 22, 1881; discharged, Mar. 22, 1886; re-enlisted, May 7, 1886..	Mass	Springfield.
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INFANTRY—THIRTEENTH REGIMENT.

<i>Colonel.</i>				
William J. White, July 4, 1884	Colonel 7th Reg't, July 4, 1884; assigned to command of the 13th Reg't on consolidation with the 7th, May 11, 1887.	Ohio	Springfield.
<i>Lieutenant-Colonel.</i>				
Chas. D. Thompson, Aug. 9, 1884.....	.....	Private, Co. G, 13th Reg't, Sept. 3, 1877; 1st Lieutenant, Sept. 15, 1877; Captain, August 26, 1878; Major, Sept. 25, 1883.	Ohio	Georgetown.
<i>Major.</i>				
Edward Rott, July 4, 1884.....	.....	2d Lieutenant Co. H, 4th Reg't, Aug. 20, 1877; 1st Lieutenant, April 16, 1878; Captain, Dec. 27, 1880; transferred with Co. to 7th Reg't, 1884; assigned to 13th Reg't, on consolidation with 7th, May 11, 1887.	Ohio	Germanstown.
<i>First Lieutenant and Adjutant.</i>				
Daniel C. Putnam, May 3, 1886.....	.....	Adjutant 7th Reg't, May 3, 1886; assigned to 13th Reg't, on consolidation with 7th, May 11, 1887..	Mass	Springfield.
<i>First Lieutenant and Quartermaster.</i>				
Burt H. Whitely, June 22, 1887 .....	.....	Private, Co. F, 25th Mass. V. I., March 21, 1862; Com. Sergeant, May 23, 1864; Q. M. Sergeant, May 16, 1865; 2d Lieutenant, May 17, 1865; mustered out at close of war, July 13, 1865.	.....	Springfield.

INFANTRY—THIRTEENTH REGIMENT—Continued.

Name, Rank and Date of Commission.	Company.	Service.		Born.	Address.
		In National Guard.	In the Armies of the United States.		
<i>Surgeon.</i> Willis W. Hall, July 12, 1884.....	.....	Surgeon 7th Reg't, July 12, 1884; assigned to 13th Reg't, on consolidation with 7th, May 11, 1887..	.....	Ohio	Springfield.
<i>Chaplain.</i> Frank G. Mitchell, July 12, 1884.....	.....	Private, Co. A., 4th O. N. G., June, 1863; Sergeant, May 2, 1864; mustered out with Reg't, 1865; Chaplain, 7th Reg't, July 12, 1884; assigned to 13th Reg't, on consolidation with 7th, May 11, 1887.	Sergeant, Co. A, 134th O. V. I., May 6, 1864; mustered out with Regiment, Aug. 31, 1864.	.....	Springfield.
<i>Captains.</i> Edward E. Mullenix, May 21, 1878...	B	2d Lieutenant, 2d troop Cav., O. N. G., Aug. 14, 1876; 1st Lieut., April 6, 1877; Captain, May 21, 1878; company changed to Infantry and assigned to 13th Reg't as Co. A, April 18, 1882; re-elected Captain, June 8, 1883; letter of Company changed to B, May 11, 1887.	Private, Co. I, 24th O. V. I., June 14, 1861; Corporal, June, 1861; Sergeant, May, 1862; 2d Lieutenant, Jan. 10, 1863; 1st Lieutenant, April 21, 1864; Major 175th O. V. I., Oct. 8, 1864; Lieut.-Col., June 6, 1865; mustered out close of war, June 27, 1865.	Ohio	Hillsboro.
George W. Brock, March 22, 1883.....	F	1st Lieutenant, Co. B, May 15, '82; letter of Company changed to F, May 11, 1887 .....	.....	Ohio	Cincinnati.
Samuel A. Bousman, July 11, 1884...	C	Sergeant, Co. C, Aug. 14, 1877; 1st Sergeant, July 8, 1879; 2d Lieut., Jan. 20, 1883; Co. transferred to 13th Reg't, May 11, 1887.	Private, Co. D, 7th U. S. C., April 24, 1871; 1st Sergeant, Sept. 4, 1871; discharged March 24, 1876.	Pa	German town.
Daniel W. Young, Jan. 20, 1886.....	E	Captain, O. V. M., 1863; Captain, Co. I, 4th Reg't, July 30, 1880; resigned Nov. 7, 1881; Co. transferred from 7th Reg't and letter changed to E, May 11, 1887 .....	.....	Germany..	Miamisburg.

William C. Williams, March 31, 1886.....	H	Private, Co. D, Aug. 27, 1885; 1st Lieutenant, Aug. 28, 1885; letter of Co. changed to H, May 11, '87.	Private, Co. H, 7th U. S. C., Sept. 28, 1873; Corporal, Nov. 14, 1875; Sergeant, Oct. 5, 1876; honorably discharged, Sept. 28, 1878.	W. Va.....	New Vienna.
Joseph S. Harris, April 24, 1886.....	G	Sergeant, Co. E, 4th Reg't, July 7, 1876; honorably discharged, May 17, 1882; 1st Sergeant, Co. E, 13th Reg't, July 10, 1884; 2d Lieutenant, Feb. 6, 1886; letter of Co. changed to G, May 11, '87.	Private, Co. D, 8th U. S. I., Jan. 29, 1866; Corporal, March 8, 1867; Sergeant, July 26, 1868; honorably discharged, Jan. 29, 1869.	Ohio.....	Xenia.
William Wagner, Feb. 5, 1887.....	A	Private, Co. A, 7th Reg't, March 31, 1879; Corporal, April 12, 1880; 1st Sergeant, July 21, 1881; 2d Lieutenant, Dec. 8, 1881; 1st Lieutenant, Nov. 17, 1886; Co. transferred to 13th Reg't, May 11, 1887.....	.....	Ohio.....	Springfield.
John G. Rhodes, June 28, 1887	D	.....	.....	.....	Georgetown.
<i>First Lieutenants.</i>					
Archibald B. Brock, June 26, 1883.....	F	1st Sergeant, Co. B, Feb. 21, 1882; letter of Co. changed to F, May 11, 1887 .....	.....	Vermont...	Loveland.
James Gunckel, July 11, 1884.....	C	Sergeant, Co. C, 7th Reg't, Aug. 14, 1877; Co. transferred to 13th Reg't, May 11, 1887.	Private, Co. H, 35th O. V. I., Aug. 26, 1861; Sergeant, Sept. 25, 1863; honorably discharged September 15, 1864.	Ohio	Germanstown.
Frank E. Kerans, Sept. 18, 1885.....	D	Private, July 25, 1879; Corporal, Oct., 1882; 2d Lieutenant, July 12, 1884; letter of Co. changed to D, May 11, 1887.....	.....	Ohio.....	Georgetown.
John F. Shepard, March 31, 1886.....	H	Private, Co. D, Aug. 27, 1885; 2d Lieutenant, Jan. 7, 1886; letter of Co. changed to H, May 11, '87.	.....	Ohio.....	New Vienna.
Carl K. Mower, Feb. 5, 1887.....	A	Private, Co. A, April 13, 1885; Sergeant, July 19, 1886.....	.....	.....	Springfield.
Harry Richards, June 18, 1887.....	G	Private, Co. E, 4th Reg't, July 7, 1876; Sergeant, July 3, 1878; mustered out, February, 1884; Private, Co. G, 13th Reg't, June 10, 1886.	.....	England...	Xenia.

INFANTRY—THIRTEENTH REGIMENT—Continued.

Name, Rank and Date of Commission.	Company.	Service.		Born.	Address.
		In National Guard.	In the Armies of the United States.		
<i>First Lieutenants—Continued.</i>					
Charles F. Eminger, July 20, 1887.....	E	Private, Co. I, 4th Reg't, O. N. G., April 10, 1884; Co. transferred to 7th Reg't, May 31, 1884, and letter changed to D; Co. transferred to 13th Reg't, and letter changed to E .....	.....	Ohio	Miamisburg.
<i>Second Lieutenants.</i>					
William Todd, March 22, 1883.	F	Sergeant, Co. B, February 21, 1882; letter of Co. changed to F, May 11, 1887.....	.....	Ohio	Loveland.
Charles E. Boehnke, July 11, 1884.....	C	Corporal, Co. C, Seventh Reg't, Aug. 14, 1877; Sergeant, July 28, 1879; Hospital Steward, July 5, 1882; Co. transferred to 13th Reg't, May 11, 1887.....	.....	.....	Germanatown.
Ed. L. Warson, June 24, 1886.....	B	Trumpeter 2d Troop Cav., O. N. G., Jan. 7, 1877; Sergeant, Sept. 9, 1880; Co. changed to Infantry and assigned to 13th Reg't as Co. A, April 18, 1882; 1st Sergeant, Sept. 3, 1883; letter of Company changed to B, May 11, 1887.....	.....	Ohio	Hillsboro.
Charles T. Davis, Nov. 17, 1886.....	A	Private, Co. A, July 8, 1879; discharged expiration term of service .....	.....	Ohio	Springfield. New Vienna. Georgetown.
Charles Gorham, June 18, 1887..... Thomas C. Smiley, June 29, 1887.....	G D	Corporal, Co. G, 13th Reg't, O. N. G., Sept. 3, 1877; discharged on expiration of term of service, Sept. 2, 1882.	..... Private, Company C, 89th O. V. I., Aug. 4, 1862; discharged June 7th, 1865, close of war.	..... Ohio	

August Storeck, July 5, 1887.....	E	Private, Co. D, 7th Reg't, April 10, 1884; Corporal, Dec. 10, 1884; Sergeant, July 5, 1886; Co. transferred to 13th Reg't, and letter changed to E, May 11, 1887.....	Ohio.....	Miamisburg.
INFANTRY—FOURTEENTH REGIMENT.				
<i>Colonel.</i> George D. Freeman, Dec. 29, 1877.....	.....	Colonel 14th Reg't, Dec. 29, 1877; re-commissioned Feb. 9, 1883.....	Ohio.....	Columbus.
<i>Lieutenant-Colonel.</i> Andrew Schwarz, June 18, 1885.....	.....	Captain, Co. B, 14th Reg't, Feb. 21, 1880; Major, Aug. 9, 1882.	Germany..	Columbus.
<i>Major.</i> Alonzo B. Coit, July 14, 1886.....	.....	Captain Co. B, Aug. 15, 1882.....	Ohio.....	Columbus.
<i>First Lieutenant and Adjutant.</i> Thaddeus R. Fletcher, Oct. 20, 1883.....	.....	Private, Co. F, 14th Reg't, Aug. 8, 1877; Sergeant, April 14, 1880; 1st Sergeant, June 7, 1882; discharged Aug. 8, 1882; re-enlisted Aug. 9, 1882; Serg't-Major, Sept. 20, 1882	Ohio.....	Columbus.
<i>First Lieutenant and Quartermaster.</i> Henry A. Guitner, April 5, 1878.....	.....	1st Lieutenant 3d Reg't, O. V. M., July 31, 1863; resigned Aug. 19, 1865; Private, Co. C, 14th Reg't. O. N. G., Oct. 1, 1877; 1st Lieut. and Q. M., April 5, 1878; re-commissioned July 15, 1884.	Ohio..... "	Columbus.
<i>Surgeon.</i> Lovett T. Guerin, May 22, 1885.....	.....	Private, 3d Reg't of Infantry, O. N. G., July 7, 1863; discharged for disability, May 3, 1864; private in Governor's Guard, June 23, 1879; transferred to Co. A, 14th Reg't, August 3, 1882; detached to serve as Asst. Surgeon until commissioned as Surgeon. Private, Co. I, 12th Reg't, Aug. 15, 1878; Corporal, August 27, 1878; transferred to the 14th Reg't, July 2, 1879; detailed as Asst. Surgeon Aug. 4, 1882.....	Ohio.....	Columbus.
<i>Assistant Surgeon.</i> Fred. Gumsaulus, May 22, 1885.....	.....			Columbus.

INFANTRY—FOURTEENTH REGIMENT—Continued.

Name, Rank and Date of Commission.	Company.	Service.		Born.	Address.
		In National Guard.	In the Armies of the United States.		
<i>Chaplain.</i>					
William E. Moore, June 6, 1879.....	.....	.....	Private, Co. K, 2d U. S. I., Sept. 15, 1837; honorably discharged April, 1838; Private, in "Chester Co. Battery," July 1, 1863; 2d Lieutenant, July 6, 1863; mustered out with Battery Aug. 24, 1863.	Pa	Columbus.
<i>Captains.</i>					
Albert Getz, May 31, 1881.....	I	Private Co. E, 6th Reg't, April 26, 1881; Captain, May 31, 1881; transferred with Co. to 14th Regiment Dec., 1885..	Private, Co. K, 114th O. V. I., July 31, 1862; Corporal, Dec., 1864; mustered out at close of war, July 31, 1865.	Germany..	Lancaster.
John C. Speaks, March 26, 1883.....	H	Private, Co. H, March 2, 1878; 2d Lieutenant, March 5, 1880.....	.....	Ohio	C. Winchester.
Albert B. Gore, March 26, 1885.....	A	Private, Co. A, Feb. 19, 1878; Corporal, March 15, 1878; Sergeant, June 5, 1880; 1st Sergeant, Aug. 14, 1882; 1st Lieutenant, April 9, 1883.....	.....	Ohio	Columbus.
William F. Wieland, July 25, 1885....	E	Private, Co. E, 14th Reg't, Aug. 12, 1878; Sergeant, 1880; 1st Sergeant, 1881; First Lieutenant, Feb. 19, 1884.....	.....	Ohio	Columbus.
Charles Merion, Jr., July 27, 1885.....	F	Private, Co. B, Aug. 8, 1879; 1st Lieut., Jan. 4, 1880.....	.....	Ohio	Mt. Gilead.
Homer B. Abbott, Aug. 3, 1885.....	K	Private, Co. K, Feb. 13, 1879; Corporal, March, 1883; 2d Lieutenant, April 16, 1884.....	.....	" .....	Columbus.
Henry Schick, May 28, 1886.....	C	Private, Co. C, Oct. 1, 1877; Sergeant, Nov. 1, 1877; 2d Lieut., Jan. 11, 1879; 1st Lieut., April 14, 1884 .....	.....	Ohio	Delaware.
			.....	Ohio	Westerville.

Charles C. Sleffel, July 15, 1886	B	Private, Co. B, June 14, 1879; Sergeant, June 14, 1880; 1st Sergeant, June 14, 1881; 2d Lieut., July 8, 1885; 1st Lieut., Aug. 3, 1885.....	.....	Australia.	Columbus. Marysville.
John F. Zwerner, April 16, 1887..... C. Barton Adams, May 23, 1887.....	D K	Private, Co. K, Feb. 13, 1879; Corporal, Feb., 1881; Sergeant, Oct., 1881; honorably discharged Oct., 1882; re-enlisted Oct. 6, 1885; 1st Lieut., Dec. 8, 1885.....	.....	Ohio.....	Delaware.
Frank S. McMahon, July 2, 1887.....	G	Private, June 24, 1882; Corporal, July 1, 1882; Sergeant, Nov. 1, 1883; 1st Sergeant, April 1, 1885; 1st Lieut., Oct. 23, 1886.....	.....	Ohio.....	Richwood. Columbus.
Will W. Homes, July 30, 1887.....	L	2d Lieutenant, Co. B, 50th Reg't, N. Y. S. N. G., March, 1863, to Feb. 20, 1864; First Lieutenant, Dec., 1864; resigned, July, 1876; Hospital Steward, 14th Reg't, O. N. G., July, 1886.	.....	Ohio..... New York.	.....
<i>First Lieutenants.</i>					
William W. Walker, May 31, 1881.....	I	Private, Co. E, 6th Reg't, April 26, 1881; 1st Lieutenant, May 31, 1881; transferred with Co. to 14th Reg't, December, 1885; re-commissioned, May 31, 1886.	Private, Co. M, 12th O. V. C., Sept. 18, 1863; honorably discharged Nov. 14, 1865.	Ohio.....	Lancaster.
William L. Walters, July 16, 1885.....	H	Private, Co. H, March 2, 1878; Corporal, April 24, 1882; honorably discharged March 2, 1883; re-enlisted March 12, 1883; Sergeant, April 2, 1883; 1st Sergeant, Aug. 6, 1883.....	.....	Ohio.....	C. Winchester.
Millard F. Cunard, May 3, 1886	E	Private, Co. E, July, 1880; 2d Lieutenant, Feb. 18, 1884.....	.....	" .....	Mt. Gilead.
Edward Draudt, July 15, 1886	B	Private, Co. B, Feb. 14, 1882; Sergeant, June 3, 1884.....	.....	" .....	Columbus. "
James M. Broucher, Nov. 15, 1886	K	.....	.....	.....	.....
Fred M. Baueries, July 2, 1887....		Private, Feb. 13, 1879; Corporal, July 15, 1881; Q. M. Sergeant, August 8, 1884; discharged March 13, 1884; re-enlisted March 13, 1884; 2d Lieut., Aug. 3, 1885.....	.....	Ohio.....	Delaware.

INFANTRY—FOURTEENTH REGIMENT—Continued.

Name, Rank and Date of Commission.	Company.	Service.		Born.	Address.
		In National Guard.	In the Armies of the United States.		
First Lieutenants—Continued.					
Willis E. Young, July 2, 1887 ..	G	Private, Co. G, 14th Reg't, July 29, 1881; Sergeant, June, 1882; discharged Aug. 29, 1886.....	.....	Ohio	Richwood.
Edwin G. Bailey, July 2, 1887	A	Private, Co. B., 14th Reg't, July 29, 1879; discharged Nov. 14, '81; re-enlisted July 25, 1882; transferred to Co. A, April, 1885; Corporal, June 1, 1885; Sergeant-Major, Oct. 1, 1885 .....	.....	Ohio.....	Columbus.
Frank R. Ford, July 20, 1887	D	Private, Co. D, July 8, 1880; Corporal, April 1, 1884; 2d Lieut., May 5, 1885 .....	.....	Ohio	Marysville. Columbus.
John F. McFadden, Aug. 31, 1887	F	Private, Co. C, 14th Reg't, April 2, 1883; discharged Dec. 29, 1885.....	.....	Ohio	Westerville.
Curtis C. Martin, Sept. 5, 1887	C	.....	.....	.....	.....
Second Lieutenants.					
William D. Ranney, April 24, 1886 ...	F	Private, October 18, 1882; Corporal, August, 1883; Sergeant, Aug. 4, 1885 .....	.....	Ohio	Columbus.
Geo. S. Cunningham, July 15, 1886....	B	Private, Co. A, Oct. 7, 1877; Corporal, Feb. 7, 1881; Sergeant, April 1, 1883; honorably discharged March 10, 1884; enlisted in Band July 14, 1884; detailed as 1st Sergeant, gun squad, July 16, 1884 .....	.....	Ohio	Columbus.
Emery A. Everett, Nov. 15, 1886.....	.....	Private, Gov. Guard, Oct. 29, 1877; Corporal, March 26, 1883; Q. M. Sergeant, May 18, 1885.....	.....	Ohio	Columbus.
Clarence M. Crumley, Feb. 28, 1887....	I	Private, Co. I, 14th Reg't, March 31, 1882; First Serg't, Feb. 20, '83.	.....	New York.	Columbus.
			.....	Ohio	Lancaster.

George H. Murray, July 2, 1887	A	Private, Co. A, 14th Reg't, July 24, 1883; Sergeant, Jan. 10, 1886...	.....	Ohio	Columbus.
Ralph H. Van Deman, July 2, 1887...	K	Private, Co. K, 14th Reg't, April 14, 1884; Corporal, Aug. 27, 1884...	.....	" .....	Delaware.
Elzie Parthmore, July 23, 1887	D	Private, Co. D, 14th Reg't, April 8, 1884; Corporal, April 5, 1885...	.....	" .....	Marysville.
Frank W. Wilson, Aug. 1, 1887	E	Private, Co. E, 14th Reg't, August 12, 1878; Sergeant, 1883.....	.....	" .....	Mt. Gilead.
John M. Brown, Aug. 30, 1887..	C	Private, Co. E, 6th Reg't, August 24, 1883; Co. transferred to 14th Reg't, and letter changed to I, Dec. 22, 1885; Corporal, Co. I, Aug. 8, 1886; transferred to Co. C, July, 1887.....	.....	Ohio	Westerville.

INFANTRY—SIXTEENTH REGIMENT.

Colonel:					
Charles M. Keyes, June 14, 1887 .....	.....	Captain, Co. B, 16th Reg't, Aug. 5, 1878; re-commissioned Sept. 1, 1883; Lieutenant-Colonel, July 13, 1885.	Private, Co. E, 8th O. V. I., April 24, '61; honorably discharged Aug. 18, '61; private, Co. G, 123d O.V.I., August 8, 1862; Sergeant, Sept. 24, 1862; 2d Lieutenant, Dec. 8, 1863; 1st Lieutenant, Feb'y 23, 1865; mustered out at close of war, June 12, 1865.	Illinois.	Sandusky.
Lieutenant-Colonel.					
Henry S. Bunker, July 5, 1887 .....	.....	Private, Co. A, 16th Reg't, May 1, 1878; 1st Lieutenant and Adjutant, May 10, 1878; Major, May 19, 1884; re-commissioned May 19, 1886.	Private, Co. C, 96th O. V. I., Aug. 11, 1862; Commissary-Sergeant, March 4, 1863; mustered out at close of war, July 29, 1865.	Ohio	Toledo.
Major.					
Maurice B. Lemmon, Sept. 7, 1886.....	.....	Private, Co. I, August 15, 1878; 2d Lieutenant, Aug. 26, 1878; Capt., July 23, 1879; re-commissioned August 19, 1884.	Private, Co. B, 169th O. V. I., May 2, 1864; mustered out Sept. 4, '64.	Ohio	Clyde.
First Lieutenant and Quartermaster.					
Thomas M. Sloane, July 29, 1885 .....	.....	Private, Co. B, 16th Reg't, June, 1880; 1st Sergeant, July, 1880; 1st Lieutenant, July 29, 1885; 1st Lieut. and Q. M., Sept. 7, 1886....	.....	Ohio	Sandusky.
Surgeon.				"	Norwalk.
Arthur L. Osborn, July 6, 1887 .....	.....	Private, Co. G, 16th Reg't, Aug. 18, 1877; honorably discharged, Aug. 18, 1882; Assistant Surgeon, August 18, 1882.	Corporal, Co. B, 197th O. V. I., Feb. 22, 1865; discharged, Aug. 7, 1865.	Ohio	

INFANTRY—SIXTEENTH REGIMENT—Continued.

Name, Rank and Date of Commission.	Company.	Service.		Born.	Address.
		In National Guard.	In the Armies of the United States.		
<i>Chaplain.</i> Patrick S. Slevin, July 28, 1885.....	.....	Chaplain, 16th Reg't, July 28, 1885.	Lieutenant-Colonel, 100th O. V. I., August 8, 1862; Colonel, May 13, 1863; Brevet Brigadier-General, March 13, 1865; honorably discharged by reason wounds, Nov. 30, 1864.	Ireland.	Toledo.
<i>Captains.</i> Jacob M. Weier, July 21, 1880	A	Private, "Walbridge Zouaves," April 15, 1873; Corporal, October 10, 1873; Sergeant, Nov. 21, 1873; 1st Sergeant, Feb. 13, 1874; 2d Lieut., Oct. 27, 1874; 1st Lieut., March 3, 1875; resigned, Oct. 3, 1875; 2d Lieutenant, "Walbridge Light Guard," April 23, 1877; 1st Lieutenant, Co. A, 16th Reg't, June 19, 1879 .....	..... Private, Co. A, 14th O. V. I., Apr. 16, 1861; Corporal, May 15, 1861; mustered out expiration of enlistment; Private, Co. B, 14th O. V. I., Aug. 25, 1861; honorably discharged, Oct. 7, 1862; 2d Lieut. Co. L., 2d O. V. H. Artillery, June 17, 1863; 1st Lieutenant, Sept. 7, 1863; honorably discharged, Aug. 23, 1865.	Germany .. Ohio	Toledo.
A. Romeyn Rogers, Oct. 21, 1884	H	Captain, "Walbridge Zouaves," (one year), Nov. 1, 1872; Captain, Co. H, 16th Reg't, Oct. 21, 1884.	.....	.....	.....
Edmund B. King, July 29, 1885.....	B	Private, Co. B, June 9, 1880; 2d Lieutenant, July 29, 1880 .....	.....	.....	.....
James R. Wade, Feb. 15, 1886	C	Sergeant, "Toledo Grays," March 15, 1875; 2d Lieutenant, March 22, 1877; Co. attached to 16th Reg't, August, 1877, and lettered C; 1st Lieutenant, Nov. 27, 1878; Captain, Aug. 18, 1882; resigned, May 20, 1884 .....	.....	Ohio	Sandusky.
			.....	Ohio	Toledo.

William O. Bulger, April 9, 1886	D	Private, Co. D, June 4, 1879; 1st Sergeant, May 16, 1884. ....	.....	Ohio.....	Fostoria.
Allen G. Winnie, Sept. 13, 1886.....	I	Private, Aug. 15, 1878; Corporal, Aug. 18, 1878; 1st Sergeant, Aug. 1, 1879; 1st Lieutenant, Jan. 2, 1880; re-commissioned, 1st Lieut., Jan. 29, 1885 .....	.....	Ohio	Clyde, Napoleon.
Charles E. Reynolds, Sept. 22, 1886 ...	F	1st Lieut., Co. F, August 4, 1886...	Private, Co. F, 68th O. V. I., Jan. 5, 1862; Q. M. Sergeant, May, '63; honorably discharged, June 15, 1865, close of war.	Mass	
Cyrus H. Dillman, Dec. 22, 1886	E	Private, Co. E, 16th Reg't, July 6, 1877; Sergeant, Aug. 10, 1882; 1st Sergeant, Feb. 6, 1884; 2d Lieut., Jan. 17, 1885; 1st Lieutenant, August 10, 1886 .....	.....	Ohio	Bryan. Fostoria.
Jacob Kreiger, Sept. 5, 1882.....	D	Private, Co. D, May 24, 1880; Corporal, July 1, 1881; Sergeant, Sept. 1, 1882; re-commissioned Sept. 30, 1887.	Private, Co. K, 101st O. V. I., Aug. 14, 1862; mustered out at close of war, June 12, 1865.	Ohio	
Samuel F. Tanner, March 25, 1885.....	H	Private "Walbridge Zouaves," 1872; Quartermaster Sergeant, 16th Reg't, 1878 .....	.....	Ohio	Toledo.
Mortimer F. Gilmore, Aug. 17, 1885.	A	Private, Co. A, Aug. 25, 1879; 2d Lieutenant, May 12, 1884.....	Private, Co. B, 18th Reg't, U. S. I., Aug. 2, 1861; Sergeant, Jan., 1862; 1st Sergeant, March, 1862.	"	" "
William H. Moore, July 29, 1887	C	Captain, Co. H, 16th Reg't, Sept. 3, 1879; discharged at expiration of term of service.	.....	New York.	
Alfred W. Wiles, Sept. 13, 1886.....	I	Private, Aug. 15, 1878; Corporal, Aug. 18, 1878; 2d Lieutenant, July 19, 1879; re-commissioned 2d Lieutenant, Aug. 19, 1884.....	.....	Ohio.....	Clyde.
Frank W. Reiter, Sept. 22, 1886.....	F	Private, Co. F, March 17, 1882; 2d Lieutenant, March 4, 1884.....	.....	" .....	Napoleon.
George P. Barker, Sept. 23, 1886	B	Private, Co. B, June 9, 1880; 2d Lieutenant, July 29, 1885.....	.....	" .....	Sandusky. Bryan.
William M. Boothman, June 17, 1887.	E	.....	.....	.....
Edward W. Rydman, Aug. 17, 1885..	A	Private, Co. A, March 3, 1876; Corporal, May 12, 1877; Sergeant, June 18, 1879; re-enlisted, May 12, 1881 .....	.....	Ohio.....	Toledo.
A. E. Augenstine, Sept. 22, 1886.....	F	Musician, Co. F, July 15, 1884 .....	.....	" .....	Napoleon.

INFANTRY—SIXTEENTH REGIMENT—Continued.

Name, Rank and Date of Commission.	Company.	Service.		Born.	Address.
		In National Guard.	In the Armies of the United States.		
Second Lieutenants—Continued.					
William L. Lewis, Sept. 23, 1886.....	B	Private, Co. B, June 9, 1880; Corporal, Aug. 15, 1883; re-enlisted, June 9, 1885; 1st Sergeant, Aug. 3, 1886 .....	.....	Ohio	Sandusky.
Leroy N. Brown, May 14, 1887.....	I	Private, Co. I, Aug. 15, 1879; Sergeant, May 8, 1885; 1st Sergeant, May 1, 1886.....	.....	Ohio	Clyde. Bryan.
John W. Hitt, June 17, 1887.....	E	.....	.....	.....	.....
Charles O. Phelps, June 17, 1887.....	C	Private, Co. C, 16th Reg't, May 8, 1883; Corporal, Aug. 5, 1884; Sergeant, Oct. 6, 1886.....	.....	Ohio	Toledo. “
Carl H. Beckham, June 17, 1887.....	H	.....	.....	.....	.....
Wm. G. Klinepeter, Aug. 10, 1887.....	D	Private, Co. D, May 26, 1882; Sergeant, Jan. 5, 1883; 1st Sergeant, June 15, 1884; discharged, May 26, 1887; re-enlisted, July 10 '87..	.....	.....	Fostoria.

INFANTRY—SEVENTEENTH REGIMENT.

<i>Colonel.</i>					
Edgar J. Pocock, Feb. 22, 1881.....	.....	Captain "Coshocton Guard," Sept. 30, 1876; Lieutenant-Colonel, 7th Reg't, Oct. 25, 1877; Colonel, Feb. 22, 1881; re-commissioned, Feb. 24, 1886.	Private, Co. H, 51st O. V. I., Sept. 10, 1861; Sergeant, Oct. 4, 1861; 1st Sergeant, Dec. 18, 1862; 2d Lieutenant, June 10, 1863; 1st Lieutenant, Jan. 6, 1865; resigned June 4, 1865.	Ohio	Columbus.
<i>Lieutenant-Colonel.</i>					
Emanuel Finger, Feb. 24, 1882.....	.....	Private, Nov. 6, 1876; Captain, Co. F, 12th Reg't, Feb. 13, 1877; re-commissioned, May 23, 1887 .....	.....	Ohio	Ashland.

Major.	Cary W. Montgomery, Aug. 14, '84.....	Private, Co. G, 17th Reg't, Oct., 1878; 2d Lieutenant, Aug. 4, '80; 1st Lieutenant, Feb. 14, 1881; 1st Lieut. and Q. M., Dec. 8, 1881 .....	.....	Ohio.....	Newark.
	First Lieutenant and Adjutant.			"	Hebron.
2Ex.D.	E. A. Beverly, March 10, 1882.....	1st Sergeant, Co. K, Dec. 17, 1878; 1st Lieut., March 10, 1882; re-commissioned, March 16, 1887; appointed Adjutant, May 14, '87..	Private, Co. G, 76th O. V. I., Nov. 16, 1861; discharged, January 12, 1865; Private, Co. D, 1st O. V. C., March 24, 1865; mustered out close of war, Sept. 13, 1865.	.....	Polk.
	First Lieutenant and Quartermaster.			.....
	John P. Smith, Aug. 15, 1884. . . . .	.....	.....	.....	Hebron.
	Surgeon.			.....
	Jno. H. Gerhardt, June 10, 1884.....	.....	.....	.....	Mt. Vernon.
	Assistant Surgeon.			.....
	Jno. J. Scribner, June 9, 1885.....	.....	.....	.....	Coshocton.
	Chaplain.			.....
	Wilbur L. Davidson, May 3, 1886.....	.....	.....	.....	Coshocton.
	Captains.			.....	Hebron.
	Samuel M. Price, Nov. 14, 1877.....	F	1st Lieutenant Co. F, Sept. 30, 1876; Captain, Nov. 14, 1877; re-commissioned, Dec. 1, 1882.....	Ohio.....	
	Hamlin D. Burch, March 10, 1882.....	K	1st Lieutenant, Co. K, Dec. 17, '78..	"	
	Judson H. Hovey, Sept. 5, 1882.....	D	Private, Co. A, Salem Rifles, Aug. 20, 1875; Corporal, Oct. 2, 1875; discharged, October 20, 1880; re-enlisted in Co. K, 2d Reg't, O. N. G., Aug. 20, 1880; Corporal, Sergeant, March 1, 1881; Captain, Sept. 5, 1882; re-commissioned, Sept. 5, 1887; Co. transferred to 17th Reg't, and letter changed to D.....	Ohio.....	Lower Salem.
				

INFANTRY—SEVENTEENTH REGIMENT—Continued.

Name, Rank and Date of Commission.	Company.	Service.		Born.	Address.
		In National Guard.	In the Armies of the United States.		
Captains—Continued.					
Joseph Beckhardt, Oct. 23, 1883.....	B	Private, Co. B, 8th Reg't, Dec. 4, 1875; Q. M. Serg't, July, 1878; 1st Lieutenant, Co. B, 17th Reg't, Oct. 13, 1881.....	.....	Germany..	Zanesville.
Frank G. Warden, March 12, 1884.....	G	Private, Co. G, May 3, 1879.....	.....	Ohio	Newark.
William L. West, Dec. 28, 1885	E	Private, Co. E, 6th Reg't, Dec. 22, 1885; Co. transferred to 17th Reg't May 11, 1887.....	.....	West Va...	Matamoras.
Thomas J. Smith, June 24, 1886.....	A	Captain, Co. A, 17th Reg't, June 19, 1876; Major, 17th Reg't, Feb. 19, 1881; resigned, Feb. 24, 1882; Captain, Co. A, June 24, 1886.	Private, Co. G, 61st O. V. V. I., Mar. 2, 1862; mustered out close of war, July 25, 1865.	Ohio.....	N. Lexington.
David Collier, May 26, 1887	H	1st Lieutenant, Co. H, July 22, '84.	.....	Ohio	Plimpton.
Marcena M. Murphy, May 30, 1887...	C	Captain, Co. C, 17th Reg't, O. N. G., April 28, 1881; discharged expiration of term of service, April 27, 1886.	Private, Co. F, 43d O. V. I., Oct. 23, 1861; discharged for disability Nov. 6, 1863; Private and 1st Sergeant, Co. A, 176th O. V. I., Aug. 12, 1864, to Jan. 6, 1865; 2d Lieutenant, Co. D, 176th O. V. I., Jan. 6, 1865; 1st Lieut., Co. C, April 8, 1865, to June 18, 1865; 2d Lieut., 17th U. S. C. T., July 22, 1865; 1st Lieut., Nov. 15, 1865; mustered out May, 1866; Brevetted Captain, U. S. V., March 13, 1865.	"	Mt. Vernon.
First Lieutenants.					
John C. Ogle, Nov. 15, 1883.....	B	Private, August, 1879; Corporal, August 25, 1881.....	.....	Ohio.....	Zanesville.
John Demoss, Aug. 18, 1885.....	F	Private, Co. F, 1876; Sergeant, Aug. 12, 1883; 2d Lieut., August 12, 1884.....	Private, Co. D, 51st O. V. I., Sept. 15, 1861.....	Ohio.....	.Roscoe.

James Teal, June 24, 1886.....	A	Private, Co. A, 1876; discharged expiration term of service, June, 1882; re-enlisted July 18, 1883.	Private, Co. K, 129th O. V. I.; mustered out March 10, 1864; Private, Co. A, 66th O. V. V. I., August, 1864.	Ohio.....	N. Lexington.
John W. Watson, June 24, 1886.....	F	Private, Co. E, 6th Regiment, Dec. 22, 1885; 2d Lieutenant, Dec. 28, 1885.	Private, Co. I, 12th Reg't, O. V. C., Dec. 31, 1863; mustered out Nov. 14, 1865, close of war.	Ohio.....	New Matamoras.
Robert H. Fowler, March 16, 1887.....	C	.....	.....	Ohio.....	Mt. Vernon.
Ammon B. Critchfield, June 1, 1887..	H	.....	.....	.....	Big Prairie.
R. S. Holtsberry, June 14, 1887.....	K	Private, Co. K, Dec. 7, 1878; discharged Jan. 1, 1884; 2d Lieut., May 28, 1884.	Private, Co. H, 31st O. V. I., Sept. 10, 1861; re-enlisted February 22, 1864; discharged close of war, July, 20, 1865.	Ohio.....	Hebron.
Wm. B. Eldridge, Aug. 15, 1887....	G	Private, Co. G, April 16, 1883; Sergeant, June 12, 1884; 2d Lieut., June 1, 1885.....	.....	Ohio.....	Newark.
Geo. Lauer, Sept. 5, 1887.....	D	Private, Co. A, Salem Rifles, Aug. 1, 1875; discharged, Aug. 1, 1880: Private, Co. K, 2d O. N. G., Aug. 20, 1880; Sergeant, Oct. 15, 1880; 2d Lieut., Feb. 20, 1883; Co. transferred to 17th Regiment, and letter changed to D.....	.....	Ohio.....	Lower Salem.
<i>Second Lieutenants.</i>					
Charles H. Booz, May 14, 1886.....	B	Private Co. B, March 14, 1882; Corporal, August, 1883; Sergeant, Aug., 1884; 1st Sergeant, Aug., 1885.....	.....	Ohio.....	Zanesville.
Israel Early, June 24, 1886.....	E	Private, Co. E, 6th Reg't, Dec. 22, 1885; Sergeant, Jan. 1, 1886; Co. transferred to 17th Reg't, May 11, 1887.....	Private, Co. C, 77th O. V. I., Feb. 24, 1864; mustered out March 8, 1866, close of war.	Ohio.....	New Matamoras.
Milton T. Scarborough, Aug. 3, 1886..	H	Private, July 17, 1884; Sergeant, July 26, 1884; 1st Sergeant, Nov. 8, 1885.....	.....	Ohio.....	
Park Worley, Feb. 23, 1887.....	C	Private, Co. C, August 27, 1883.....	.....	Maryland.	Holmesville.
Lloyd T. Judd, Feb. 28, 1887.....	F	Private, Co. F, Sept. 6, 1876; Sergeant, Aug. 11, 1878; 1st Sergeant, Aug. 4, 1879; re-enlisted Nov. 2, 1882; 1st Sergeant, Nov. 2, 1882.....	.....	Ohio.....	Mt. Vernon.
Frank Brunner, June 14, 1887.....	K	Private, Co. K, July 7, 1879; Corporal, June 21, 1881; Sergeant, Aug. 10, 1883.....	.....	Conn.....	Coshocton.
			.....	Ohio.....	Hebron.

INFANTRY—SEVENTEENTH REGIMENT—Continued.

Name, Rank and Date of Commission.	Company.	Service.		Born.	Address.
		In National Guard.	In the Armies of the United States.		
<i>Second Lieutenants—Continued.</i>					
Albert D. Fowler, Aug. 15, 1887.....	A	Private, Co. A, 17th Reg't, May 4, 1881; Corporal, Aug. 7, 1882; 1st Sergeant, October 18, 1883; Second Lieut., Feb. 18, 1885; resigned June 3, 1886; re-enlisted June 30, 1886; 1st Sergeant, July 7, 1886; Second Lieutenant, August 15, 1887.....		Ohio	New Lexington.
Walter Stanley, Sept. 5, 1887.....	D	Private, Co. C, 6th Reg't, April 15, 1885; Co. transferred to 17th Reg't May 11, 1887, and letter changed to D; Corporal, August 20, 1887.....		Ohio	Lower Salem.

INFANTRY—TOLEDO CADETS—UNATTACHED.

<i>Captain.</i>					
Wm. V. McMaken, March 26, 1879.....		Captain, Toledo Cadets, March 26, 1879; re-commissioned March 31, 1884.		New York	Toledo.
<i>First Lieutenant.</i>					
William H. Cook, March 9, 1883.....		1st Sergeant, March 17, 1879; 2d Lieut., March 25, 1880.....		Ohio	Toledo.
<i>Second Lieutenant.</i>					
Thomas T. Watters, May 16, 1887.....					Toledo.

CAVALRY—FIRST CLEVELAND TROOP.

<i>Captain.</i>			
George A. Garretson, April 7, 1884.....	.....	.....	Cleveland.
<i>First Lieutenant.</i>			
Henry F. Myers, Sept. 10, 1887.....	.....	.....	Cleveland.
<i>Second Lieutenant.</i>			
Harris H. Baxter, Sept. 10, 1887.....	.....	.....	Cleveland.

ROSTER

COMMISSIONED OFFICERS, IN ORDER OF LINEAL RANK.

FIELD AND STAFF OFFICERS OF INFANTRY.

No.	Name and Rank.	Rank from.	Organization.
<i>Colonels.</i>			
1	John C. Entrekin	June 23, 1876.....	6th Regiment.
2	George D. Freeman	December 29, 1877.....	14th Regiment.
3	Edgar J. Pocock ..	February 22, 1881	17th Regiment.
4	Arthur L. Conger	July 27, 1881.....	8th Regiment.
5	William M. Williamson	April 18, 1883.....	3d Regiment.
6	Fred. H. Flick	June 16, 1884.....	5th Regiment.
7	William J. White	July 4, 1884.....	13th Regiment.
8	Frederick W. Moore	October 22, 1884.....	1st Regiment.
9	James C. Howe	February 11, 1886	2d Regiment.
10	Chas. M. Keyes.....	June 14, 1887.....	16th Regiment.
<i>Lieutenant-Colonels.</i>			
1	Emanuel Finger	February 24, 1882.....	17th Regiment.
2	James E. Shellenberger	April 18, 1883.....	3d Regiment.
3	Morton L. Hawkins	July 11, 1884.....	1st Regiment.
4	Chas. D. Thompson	August 9, 1884.....	13th Regiment.
5	Baldwin H. Millikan	May 22, 1885.....	6th Regiment.
6	Andrew Schwarz	June 18, 1885.....	14th Regiment.
7	George R. Gyger.....	July 9, 1885.....	8th Regiment.
8	Alfred P. Probert	March 31, 1886.....	2d Regiment.
9	Henry S. Bunker	July 5, 1887.....	16th Regiment.
10	John W. Gibbons	August 30, 1887.....	5th Regiment.
<i>Majors.</i>			
1	Hiram F. Collins.....	November 12, 1881.....	2d Regiment.
2	James Pettibone..	June 7, 1884.....	1st Regiment.
3	Edward Rott	July 4, 1884.....	13th Regiment.
4	Cary W. Montgomery	August 14, 1884.....	17th Regiment.
5	Curtis V. Hard	August 19, 1885.....	8th Regiment.
6	George Titus	January 27, 1886.....	6th Regiment.
7	Peter B. Rench	April 24, 1886	3d Regiment.
8	Arthur L. Hamilton	July 9, 1886.....	6th Regiment.
9	Alonzo B. Coit.....	July 14, 1886.....	14th Regiment.
10	Benjamin F. Payne	August 31, 1886.....	9th Battalion.
11	Maurice B. Lemmon	September 7, 1886.....	16th Regiment.
12	Abraham L. Whitney	May 23, 1887.....	1st Regiment.
13	Emmett F. Taggart	June 22, 1887.....	8th Regiment.
14	Harry H. Williams.....	July 11, 1887.....	3d Regiment.
15	Byron M. Clen Dening	September 9, 1887.....	2d Regiment.
<i>Adjutants.</i>			
1	William H. Gross.....	July 28, 1881.....	3d Regiment.
2	F. Marion Cline.....	August 27, 1881.....	6th Regiment.
3	Thaddeus R. Fletcher.....	October 20, 1883.....	14th Regiment.
4	Herman Mayer.....	June 27, 1884.....	5th Regiment.
5	Charles Z. Riley.....	July 23, 1885.....	1st Regiment.
6	Daniel C. Putnam.....	May 3, 1886.....	13th Regiment

FIELD AND STAFF OFFICERS—Continued.

No.	Name and Rank.	Rank from.	Organization.
<i>Adjutants—Continued.</i>			
7	Pearl C. Campbell.....	March 3, 1887.....	2d Regiment.
8	Edward A. Beverly.....	May 14, 1887.....	17th Regiment.
9	Albert A. Bartlett.....	August 6, 1887.....	8th Regiment.
<i>Quartermasters.</i>			
1	Henry A. Guitner.....	April 5, 1878.....	14th Regiment.
2	Orin F. Thompson.....	July 21, 1882.....	6th Regiment.
3	Charles C. Shuman.....	July 18, 1883.....	3d Regiment.
4	John P. Smith.....	August 15, 1884.....	17th Regiment.
5	E. J. Lukens.....	September 20, 1884.....	1st Regiment.
6	Fremont Lowry.....	March 25, 1885.....	2d Regiment.
7	Charles H. Flick.....	July 25, 1885.....	5th Regiment.
8	Thomas M. Sloane.....	July 29, 1885.....	16th Regiment.
9	James Taggart.....	August 12, 1886.....	8th Regiment.
10	John H. Bellair.....	April 27, 1887.....	9th Battalion.
11	Burt H. Whiteley.....	June 22, 1887.....	13th Regiment.
<i>Surgeons.</i>			
1	Albert C. Belden.....	August 2, 1881.....	8th Regiment.
2	Adolphus E. Jones.....	September 29, 1881.....	1st Regiment.
3	John A. Sterrett.....	May 7, 1883.....	3d Regiment.
4	John C. Bishop.....	January 1, 1884.....	6th Regiment.
5	John H. Gerhardt.....	June 10, 1884.....	17th Regiment.
6	Willis W. Hall.....	July 12, 1884.....	13th Regiment.
7	Lovett T. Guerin.....	May 22, 1885.....	14th Regiment.
8	Franklin H. Clark.....	July 20, 1886.....	5th Regiment.
9	Arthur L. Osborne.....	July 6, 1887.....	16th Regiment.
10	Alva L. Paul.....	July 12, 1887.....	2d Regiment.
<i>Assistant Surgeons.</i>			
1	William L. Templeton.....	June 22, 1863.....	3d Regiment.
2	Anderson N. Ellis.....	December 10, 1883.....	1st Regiment.
3	S. G. Glenn.....	July 12, 1884.....	2d Regiment.
4	Charles O. Dunlap.....	January 23, 1885.....	6th Regiment.
5	Fred. Gunsaulus.....	May 22, 1885.....	14th Regiment.
6	John J. Scribner.....	June 9, 1885.....	17th Regiment.
7	Emmer C. Farquhar.....	August 23, 1886.....	8th Regiment.
8	Carl G. Weber.....	July 11, 1887.....	5th Regiment.
<i>Chaplains.</i>			
1	John C. Kauffman.....	May 3, 1877.....	8th Regiment.
2	William E. Moore.....	June 6, 1879.....	14th Regiment.
3	Charles F. Dean.....	August 3, 1882.....	6th Regiment.
4	John A. Bower.....	June 17, 1885.....	2d Regiment.
5	John Mitchell.....	July 9, 1884.....	5th Regiment.
6	Frank G. Mitchell.....	July 12, 1884.....	13th Regiment.
7	John H. Ely.....	December 2, 1884.....	1st Regiment.
8	Patrick Slevin.....	July 28, 1885.....	16th Regiment.
9	Wilbur L. Davidson.....	May 3, 1886.....	17th Regiment.
10	Heber A. Ketcham.....	December 22, 1886.....	3d Regiment.
11	Jesse Henderson.....	May 14, 1887.....	9th Battalion.

LINE OFFICERS OF INFANTRY.

No.	Name and rank.	Rank from.	Co.	Regiment.
<i>Captains.</i>				
1	Samuel M. Price.....	November 14, 1877.....	F	17th Regiment.
2	Edward E. Mullenix.....	May 21, 1878.....	B	13th Regiment.
3	James P. Woodworth	December 10, 1878	E	5th Regiment.
4	William V. McMakin.....	March 26, 1879....	Toledo	Cadets (unattached).
5	John Foellger	April 4, 1879.....	I	1st Regiment.
6	Jacob M. Weier.....	July 21, 1880.....	A	16th Regiment.
7	Samuel D. Palmer.....	April 9, 1881.....	G	3d Regiment.
8	Albert Getz.....	May 31, 1881.....	I	14th Regiment.
9	John W. Carroll	November 14, 1881.....	H	1st Regiment.
10	Hamlin D. Burch.....	March 10, 1882.....	K	17th Regiment.
11	William H. Ambrose.....	June 22, 1882	C	8th Regiment.
12	Newell J. Fuller.....	August 18, 1882.....	D	5th Regiment.
13	Judson H. Hovey.....	September 5, 1882.....	D	17th Regiment.
14	Llewellyn R. Davis	September 7, 1882.....	A	5th Regiment.
15	George Brenner.....	September 12, 1882.	C	1st Regiment.
16	George W. Brock	March 22, 1883	F	13th Regiment.
17	John C. Speaks.....	March 26, 1883.....	H	14th Regiment.
18	Eli Davis.....	May 7, 1883.....	D	3d Regiment.
19	Daniel R. Shriver	August 15, 1883.....	C	6th Regiment.
20	Joseph Beckhardt.....	October 23, 1883	B	17th Regiment.
21	Frank M. Bell.....	December 24, 1883	C	2d Regiment.
22	Frank G. Warden.....	March 12, 1884.....	G	17th Regiment.
23	H. W. Crittenden	June 5, 1884.....	C	5th Regiment.
24	Simon Price	June 7, 1884	E	2d Regiment.
25	Ernst P. Dietz	June 14, 1884	B	1st Regiment.
26	Samuel A. Bousman.....	July 11, 1884.....	C	13th Regiment.
27	Homer C. Jones.....	August 6, 1884.....	G	6th Regiment.
28	A. R. Rogers.....	October 21, 1884.....	H	16th Regiment.
29	Charles L. Hunter	November 20, 1884.....	E	1st Regiment.
30	John W. Ogden.....	December 10, 1884	A	6th Regiment.
31	Hugh E. McClure.....	December 29, 1884.....	I	2d Regiment.
32	Albert B. Gore.....	March 26, 1885.....	A	14th Regiment.
33	Charles Becht ..	April 23, 1885.....	A	1st Regiment.
34	Lee O. Anderson.....	May 28, 1885	F	6th Regiment.
35	Thomas W. Thomas.....	June 4, 1885.....	D	1st Regiment.
36	William C. Bostwick	July 14, 1885.....	E	6th Regiment.
37	William F. Wieland	July 25, 1885.....	E	14th Regiment.
38	Charles Merion, Jr.	July 27, 1885.....	F	14th Regiment.
39	Edmund B. King	July 29, 1885.....	B	16th Regiment.
40	Cyrus Zimmerman.....	August 7, 1885.....	F	8th Regiment.
41	William L. West.....	December 28, 1885.....	E	17th Regiment.
42	Cortland L. Kennan.....	December 30, 1885	G	5th Regiment.
43	Daniel W. Young.....	January 20, 1886.....	E	13th Regiment.
44	James R. Wade.....	February 15, 1886	C	16th Regiment.
45	Willis E. Scott.....	March 2, 1886.....	G	2d Regiment.
46	Daniel Fovargue.....	March 11, 1886.....	F	5th Regiment.
47	William C. Williams.....	March 31, 1886.....	H	13th Regiment.
48	William O. Bulger.....	April 9, 1886	D	16th Regiment.
49	Edward S. Bryant.....	April 17, 1886.....	H	2d Regiment.
50	Joseph S. Harris.....	April 24, 1886.....	G	13th Regiment.
51	Charles L. Davis.....	May 3, 1886.....	A	2d Regiment.
52	Joseph B. McCooles.....	May 17, 1886.....	E	3d Regiment.
53	William A. Carson.....	May 18, 1886.....	A	3d Regiment.
54	John Rison.....	May 18, 1886.....	D	2d Regiment.
55	Henry Schick.....	May 28, 1886.....	C	14th Regiment.
56	Thomas J. Smith.....	June 24, 1886	A	17th Regiment.

LINE OFFICERS OF INFANTRY—Continued.

No.	Name and rank.	Rank from.	Co.	Regiment.
<i>Captains—Continued.</i>				
57	Chas. W. F. Dick	June 30, 1886.....	B	8th Regiment.
58	Edward Vollrath.....	June 30, 1886	A	8th Regiment.
59	Charles C. Sleffel	July 15, 1886.....	B	14th Regiment.
60	Harvey H. Robinson.....	July 29, 1886.....	C	9th Battalion.
61	Allen G. Winnie.....	September 13, 1886.....	I	16th Regiment.
62	Charles E. Reynolds.....	September 22, 1886.....	F	16th Regiment.
63	Lewis C. Garver	November 11, 1886.....	C	3d Regiment.
64	Job B. Johnstone.....	November 17, 1886.....	B	9th Battalion.
65	Horace N. Clemens	November 23, 1886.....	D	8th Regiment.
66	Cyrus H. Dillman.....	December 22, 1886.....	E	16th Regiment.
67	William Wagner.....	February 5, 1887.....	A	13th Regiment.
68	Edmund M. Whitney.....	February 14, 1887.....	B	5th Regiment.
69	John F. Zwerner.....	April 16, 1887.....	D	14th Regiment.
70	Belden V. Hicks.....	May 10, 1887.....	D	6th Regiment.
71	C. Barton Adams	May 23, 1887.....	K	14th Regiment.
72	Samuel M. Hoon.....	May 25, 1887.....	E	8th Regiment.
73	David Collier.....	May 26, 1887.....	H	17th Regiment.
74	James A. Freed, Jr.....	May 27, 1887.....	H	5th Regiment.
75	Jacob H. Rickert.....	May 28, 1887.....	G	8th Regiment.
76	Marcena M. Murphy.....	May 30, 1887.....	C	17th Regiment.
77	Balerea J. Aurand	June 2, 1887.....	I	8th Regiment.
78	Scott Martin.....	June 7, 1887.....	A	9th Battalion.
79	John P. Maynard.....	June 22, 1887	B	6th Regiment.
80	John G. Rhodes.....	June 28, 1887	D	13th Regiment.
81	Frank S. McMahon.....	July 2, 1887.....	G	14th Regiment.
82	Harry H. Hunter	July 19, 1887.....	F	3d Regiment.
83	Wm. H. Eccles.....	July 30, 1887.....	B	3d Regiment.
84	Will W. Homes.....	July 30, 1887.....	L	14th Regiment.
85	Joseph Wilkinson.....	August 1, 1887	H	3d Regiment.
<i>First Lieutenants.</i>				
1	William H. Walker.....	May 31, 1881	I	14th Regiment.
2	Thomas H. Wright.....	November 14, 1881.....	H	1st Regiment.
3	Jacob Kreiger	September 5, 1882.....	D	16th Regiment.
4	William H. Cook.....	March 9, 1883.....	Tol	do Cadets (unat- tached).
5	Archibald B. Brock	June 26, 1883	F	13th Regiment.
6	Gideon Radabaugh.....	July 18, 1883.....	A	2d Regiment.
7	John J. Dalton.....	November 6, 1883.....	A	5th Regiment.
8	John C. Ogle.....	November 15, 1883.....	B	17th Regiment.
9	John Giesinger	May 15, 1884.....	G	8th Regiment.
10	Oscar Mowen.....	June 2, 1884	C	2d Regiment.
11	James Howard	July 1, 1884.....	C	9th Battalion.
12	James Gunckle	July 11, 1884.....	C	13th Regiment.
13	Leonard Trieber.....	December 10, 1884	A	6th Regiment.
14	Edward H. Lovell	January 24, 1885.....	I	1st Regiment.
15	Charles W. Henry.....	March 13, 1885.....	D	6th Regiment.
16	Samuel F. Tanner.....	March 25, 1885.....	H	16th Regiment.
17	William W. Emerson	May 9, 1885.....	H	2d Regiment.
18	Harry E. Kennedy.....	June 4, 1885	A	1st Regiment.
19	William L. Walters	July 16, 1885	H	14th Regiment.
20	Mortimer F. Gilmore.....	August 17, 1885.....	A	16th Regiment.
21	John Demoss.....	August 18, 1885.....	F	17th Regiment.
22	Robert Cameron.....	September 10, 1885.....	D	8th Regiment.
23	Frank E. Kerans.....	September 18, 1885.....	D	13th Regiment.
24	James Ullum	November 2, 1885.....	I	8th Regiment.
25	Lester Crittenden.....	November 24, 1885....	C	5th Regiment.

LINE OFFICERS OF INFANTRY—Continued.

No.	Name and Rank.	Rank from.	Co.	Regiment.
<i>First Lieutenants—Continued.</i>				
26	Charles E. Marcellus.....	December 10, 1885.....	B	5th Regiment.
27	John E. Burnham	December 30, 1885.....	G	5th Regiment.
28	William H. Melton.....	February 3, 1886.....	B	9th Battalion.
29	Julius Kuert.....	March 2, 1886.....	G	2d Regiment.
30	John F. Shepard.....	March 31, 1886	H	13th Regiment.
31	M. Filmore Cunard.....	May 3, 1886	E	14th Regiment.
32	James D. Rike.....	May 18, 1886.....	A	3d Regiment.
33	Nathan I. Danner.....	May 18, 1886.....	D	2d Regiment.
34	George W. Bland.....	May 18, 1886.....	D	3d Regiment.
35	James Teal.....	June 24, 1886.....	A	17th Regiment.
36	John W. Watson.....	June 24, 1886	E	17th Regiment.
37	Fred. C. Bryan.	June 30, 1886.....	B	8th Regiment.
38	Robert D. Carver.....	July 10, 1886.....	D	1st Regiment.
39	Edward Draudt.....	July 15, 1886.....	B	14th Regiment.
40	Charles M. Bose.....	July 26, 1886.....	F	8th Regiment.
41	William H. Moore.....	July 29, 1886.....	C	16th Regiment.
42	Alfred W. Wiles.....	September 13, 1886.....	I	16th Regiment.
43	Frank W. Reiter.....	September 22, 1886.....	F	16th Regiment.
44	George P. Barker.....	September 23, 1886.....	B	16th Regiment.
45	Harvey F. Dershem.....	October 16, 1886.....	G	3d Regiment.
46	William H. Webb.....	November 11, 1886.....	C	3d Regiment.
47	James M. Broucher.....	November 15, 1886.....	L	14th Regiment.
48	Lark Moon.....	February 5, 1887.....	E	6th Regiment.
49	Karl K. Mower.....	February 5, 1887.....	A	13th Regiment.
50	Charles X. Zimmerman..	February 14, 1887.....	F	5th Regiment.
51	Adam Wurzauf.....	February 23, 1887.....	A	8th Regiment.
52	Robert H. Fowler.....	March 16, 1887.....	C	17th Regiment.
53	Charles E. Littell.....	March 16, 1887.....	B	1st Regiment.
54	Frederic A. Rife.....	April 16, 1887.....	E	1st Regiment.
55	James B. Hysell.....	April 27, 1887.....	I	6th Regiment.
56	John Proctor....	May 14, 1887.....	C	1st Regiment.
57	David S. Youngblood.....	May 30, 1887.....	C	8th Regiment.
58	John G. James.....	May 31, 1887.....	H	5th Regiment.
59	Ammon B. Critchfield....	June 1, 1887.....	H	17th Regiment.
60	Solomon H. Maneval.....	June 2, 1887.....	E	8th Regiment.
61	Charles Sherman.....	June 3, 1887.....	H	3d Regiment.
62	John C. Haffler.....	June 6, 1887.....	B	6th Regiment.
63	R. S. Holtsberry.....	June 14, 1887.....	K	17th Regiment.
64	Wm. M. Boothman.....	June 17, 1887.....	E	16th Regiment.
65	Harry Richards.....	June 18, 1887.....	G	13th Regiment.
66	Fred. M. Bauereis.....	July 2, 1887.....	K	14th Regiment.
67	Willis E. Young.....	July 2, 1887.....	G	14th Regiment.
68	Edwin G. Bailey.....	July 2, 1887.....	A	14th Regiment.
69	Edward Scoville.....	July 11, 1887.....	E	5th Regiment.
70	Edward Lunney.....	July 11, 1887.....	E	2d Regiment.
71	Wm. H. Dickman.....	July 11, 1887.....	K	2d Regiment.
72	David C. Long.....	July 11, 1887.....	I	2d Regiment.
73	Harry Z. McIntire.....	July 19, 1887.....	F	3d Regiment.
74	Frank F. Ford.....	July 20, 1887.....	D	14th Regiment.
75	Charles Eminger.....	July 20, 1887.....	E	13th Regiment.
76	Samuel J. Irwin.....	July 21, 1887.....	F	6th Regiment.
77	John H. Stewart.....	July 22, 1887.....	A	9th Battalion.
78	Charles A. Taylor.....	July 30, 1887.....	B	3d Regiment.
79	John A. Murray.....	August 3, 1887.....	C	6th Regiment.
80	Wm. B. Eldridge.....	August 15, 1887.....	G	17th Regiment.
81	John F. McFadden.....	August 31, 1887.....	F	14th Regiment.
82	Curtis C. Martin.....	September 5, 1887.....	C	14th Regiment.
83	George Lauer..	September 5, 1887.....	D	17th Regiment.

LINE OFFICERS OF INFANTRY—Continued.

No.	Name and rank.	Rank from.	Co.	Regiment.
<i>Second Lieutenants.</i>				
1	John E. Heller	August 19, 1881.....	E	3d Regiment.
2	William Todd	March 22, 1883.....	F	13th Regiment.
3	William Townsend	April 3, 1883.....	B	9th Battalion.
4	Will Johnson.....	August 10, 1883.....	C	2d Regiment.
5	James R. Cowgill	March 25, 1884.....	G	6th Regiment.
6	J. J. Rampe	June 2, 1884	I	2d Regiment.
7	Tilman Bidlack.....	June 10, 1884.....	K	2d Regiment.
8	Jeff Foster	July 1, 1884	C	9th Battalion.
9	Charles E. Boehme.....	July 11, 1884.....	C	13th Regiment.
10	Adam Maurer.....	December 10, 1884.....	A	6th Regiment.
11	Benjamin L. Thomas.....	January 10, 1885.....	H	5th Regiment.
12	Melville Keltner.. . . .	April 16, 1885	A	2d Regiment.
13	William B. Hitchcock.....	April 16, 1885	B	2d Regiment.
14	John J. Ullery	May 9, 1885	H	2d Regiment.
15	Frederick Hoffman.....	May 23, 1885.....	I	1st Regiment.
16	John W. Lowe.....	May 28, 1885	F	6th Regiment.
17	Lewis J. Wynn	July 6, 1885.....	E	2d Regiment.
18	Edwin J. Seigfried	July 6, 1885.....	G	8th Regiment.
19	Joseph K. Wilson.....	August 2, 1885.....	D	6th Regiment.
20	Edward W. Rydman.....	August 17, 1885.....	A	16th Regiment.
21	Russell Pettibone.....	August 25, 1885.....	F	1st Regiment.
22	Ira I. Morrison.....	November 6, 1885.....	B	8th Regiment.
23	Dudley B. Phillips	December 16, 1885	C	6th Regiment.
24	Tom M. Smith	March 2, 1886.....	D	2d Regiment.
25	John B. Born.....	March 2, 1886.....	G	2d Regiment.
26	Henry L. Kennan.....	March 15, 1886.....	G	5th Regiment.
27	George A. Bailey.....	April 8, 1886.....	A	5th Regiment.
28	William Ranney.....	April 24, 1886	F	14th Regiment.
29	Milton W. Richards.....	April 24, 1886.....	D	5th Regiment.
30	Charles H. Booz	May 14, 1886.. . . .	B	17th Regiment.
31	James R. Clark	May 18, 1886	A	3d Regiment.
32	Elmer M. Honnel.....	May 19, 1886.....	D	3d Regiment.
33	Harry W. Kent.....	June 14, 1886	H	1st Regiment.
34	Israel Early	June 24, 1886	E	17th Regiment.
35	Ed. L. Warson.....	June 24, 1886.....	B	13th Regiment.
36	John S. Cunningham.....	July 15, 1886.....	B	14th Regiment.
37	Orrin D. Brainard.....	July 20, 1886.....	C	5th Regiment.
38	Milton T. Scarborough	August 3, 1886.....	H	17th Regiment.
39	A. E. Augenstein.....	September 22, 1886.....	F	16th Regiment.
40	William L. Lewis	September 23, 1886.....	B	16th Regiment.
41	Patrick R. Otis.....	October 13, 1886	D	1st Regiment.
42	Emery A. Everett.....	November 15, 1886.....	L	14th Regiment.
43	Charles T. Davis	November 17, 1886	A	13th Regiment.
44	Forbes Alcock	November 23, 1886.....	D	8th Regiment.
45	William H. Dunker.....	December 21, 1886	C	3d Regiment.
46	Will F. Mader.....	February 23, 1887.....	A	8th Regiment.
47	Park Worley	February 23, 1887.....	C	17th Regiment.
48	Lloyd T. Judd.. . . .	February 28, 1887.....	F	17th Regiment.
49	Clarence M. Crumley.....	February 28, 1887.....	I	14th Regiment.
50	Charles H. Jones.....	March 16, 1887	B	1st Regiment.
51	William A. Giles.....	April 27, 1887.....	I	6th Regiment.
52	Leroy N. Brown.....	May 14, 1887.....	I	16th Regiment.
53	Thomas T. Watters	May 16, 1887.....	Tol	do Cadets (unat- tached).
54	Charles Caldwell	June 2, 1887	I	8th Regiment.
55	William H. Kemper.....	June 3, 1887	H	3d Regiment.
56	Alfred N. Van Deman.....	June 6, 1887	B	6th Regiment.

LINE OFFICERS OF INFANTRY—Continued.

No.	Name and Rank.	Rank from.	Co.	Regiment.
<i>Second Lieutenants—Contin'd.</i>				
57	William H. Sherburne	June 7, 1887	A	9th Battalion.
58	Frank Brunner	June 14, 1887	K	17th Regiment.
59	John W. Hitt	June 17, 1887	E	16th Regiment.
60	Charles O. Phelps	June 17, 1887	C	16th Regiment.
61	Carl H. Beckham	June 17, 1887	H	16th Regiment.
62	Charles Gorham	June 18, 1887	G	13th Regiment.
63	Thomas C. Smiley	June 29, 1887	D	13th Regiment.
64	George H. Murray	July 2, 1887	A	14th Regiment.
65	Ralph H. Van Deman	July 2, 1887	K	14th Regiment.
66	August Storck	July 5, 1887	E	13th Regiment.
67	Ernest S. Trayte	July 11, 1887	F	5th Regiment.
68	Wm. H. Munger	July 11, 1887	E	5th Regiment.
69	Edward M. Wicks	July 13, 1887	C	8th Regiment.
70	Henry W. Westfall	July 19, 1887	F	3d Regiment.
71	Elzie Parthmore	July 23, 1887	D	14th Regiment.
72	Alfred A. Bushong	July 25, 1887	E	8th Regiment.
73	Oscar S. Robinson	July 30, 1887	B	3d Regiment.
74	Ernest F. Cook	July 30, 1887	B	5th Regiment.
75	Frank M. Wilson	August 1, 1887	E	14th Regiment.
76	Charles Toops	August 9, 1887	E	6th Regiment.
77	Wm. G. Klinepeter	August 10, 1887	D	16th Regiment.
78	Albert D. Fowler	August 15, 1887	A	17th Regiment.
79	Jno. M. Brown	August 30, 1887	C	14th Regiment.
80	Walter Stanley	September 5, 1887	D	17th Regiment.

FIELD AND STAFF OFFICERS OF LIGHT ARTILLERY.

No.	Name and Rank.	Rank from.	Organization.
<i>Colonels.</i>			
1	Louis Smithnight	June 14, 1886	1st Regiment.
<i>Lieutenant-Colonels.</i>			
1	George Sintz	June 14, 1886	1st Regiment.
<i>Majors.</i>			
1	Edmund C. Brush	June 14, 1886	1st Regiment.
2	Edward O. Dana	June 14, 1886	1st Regiment.
<i>Adjutants.</i>			
1	Henry M. Clewell	June 22, 1883	1st Regiment.
<i>Quartermasters.</i>			
1	Alexander C. Caine	June 30, 1886	1st Regiment.
<i>Surgeons.</i>			
1	Thomas J. Cronise	June 30, 1886	1st Regiment.
<i>Assistant Surgeons.</i>			
1	B. B. Brashear	June 30, 1886	1st Regiment.
<i>Chaplains.</i>			
1	L. B. Moore	June 30, 1886	1st Regiment.

LINE OFFICERS OF LIGHT ARTILLERY.

No.	Name and Rank.	Rank from.	Battery.	Regiment.
<i>Captains.</i>				
1	Owen J. Hopkins.....	November 13, 1877.....	D	1st Regiment.
2	Joseph C. Ewart.....	November 27, 1877.....	F	1st Regiment.
3	Charles A. Miller.....	March 8, 1884.....	G	1st Regiment.
4	Eli G. Donaldson.....	April 10, 1884.....	H	1st Regiment.
5	William G. Smith.....	June 18, 1885.....	B	1st Regiment.
6	John G. Kennan.....	June 24, 1886.....	E	1st Regiment.
7	Henry A. Leslie.....	July 13, 1887.....	D	1st Regiment.
<i>First Lieutenants.</i>				
1	Lewis Kimmerlen.....	December 9, 1882.....	D	1st Regiment.
2	David Dow	March 8, 1884.....	G	1st Regiment.
3	George W. Workman.....	April 8, 1886.....	F	1st Regiment.
4	James C. Ogden	January 5, 1887.....	E	1st Regiment.
5	Frank D. McCarthy.....	February 20, 1887.....	B	1st Regiment.
6	J. William Koos.....	July 13, 1887.....	C	1st Regiment.
7	Fred. A. Gay.....	October 24, 1887.....	A	1st Regiment.
<i>Second Lieutenants.</i>				
1	John C. Goldsmith.....	July 9, 1883.....	G	1st Regiment.
2	Furham Upham.....	November 6, 1884.....	D	1st Regiment.
3	Edgar E. Peters.....	January 5, 1886.....	E	1st Regiment.
4	George U. Roulet.....	May 21, 1886.....	D	1st Regiment.
5	James C. Parker.....	May 28, 1886.....	G	1st Regiment.
6	Collin J. Forbes.....	June 3, 1886.....	B	1st Regiment.
7	Charles Hartman.....	June 3, 1886.....	H	1st Regiment.
8	Horace E. Smith.....	June 24, 1886.....	E	1st Regiment.
9	Bennett L. Taylor.....	June 28, 1886.....	C	1st Regiment.
10	Theo. F. McConnell.....	March 16, 1887.....	A	1st Regiment.
11	James D. Chandler.....	March 24, 1887.....	F	1st Regiment.
12	William A. Scott.....	July 13, 1887.....	C	1st Regiment.
13	Clarence J. Neare.....	November 11, 1887.....	B	1st Regiment.
<i>Assistant Surgeons.</i>				
1	F. C. Franke.....	June 22, 1883.....	A	1st Regiment.
2	Allen H. Vance.....	May 13, 1884.....	E	1st Regiment.
3	O. M. Willis.....	June 19, 1884.....	G	1st Regiment.
4	Arthur A. Thomen.....	May 5, 1886.....	H	1st Regiment.
5	Henry T. Sutton.....	May 5, 1886.....	C	1st Regiment.
6	Wilson W. Cullison	August 3, 1886.....	D	1st Regiment.
7	Emil Helfferich	December 6, 1886.....	B	1st Regiment.

FIRST CLEVELAND TROOP, CAVALRY.

OFFICERS.

George A. Garretson.....Captain.
Harry E. Myers.....1st Lieutenant.
Harris H. Baxter.....2d Lieutenant.

CLEVELAND—Organized April 28, 1886.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
	<i>Sergeants.</i>			<i>Privates.</i>	
1	Henry C. Rause	April 28, 1886.	1	Beidler, J. A	April 28, 1886.
2	Stewart H. Chisholm....	"	2	Bruce, Frank F	"
3	Jerome B. Zerbe.....	"	3	Barnum, F. S.	"
4	D. Z. Norton	"	4	Blair, W. L.....	"
5	Webb C. Hayes	"	5	Bushnell, F. H.....	"
6	Charles C. Bolton.....	"	6	Chapin, N. D	"
	<i>Corporals.</i>		7	Coburn, F. A.....	"
1	John Ralph Owens.....	"	8	Doty, Henry E.....	"
2	Edwin H. Williams	"	9	Doering, E. C.....	"
3	R. E. Burdick	"	10	Carleton, H. Frank	"
4	Horace A. Tuttle	"	11	Ellsworth, Frank J....	"
5	J. B. Perkins.....	"	12	Endean, Theo.....	"
6	Carlton H. Reeve.....	"	13	Herrick, Myron T....	"
7	Wm. G. Mather.....	"	14	Herrick, Frank R	"
8	.....		15	Hazzard, W. W.....	"
	<i>Trumpeters.</i>		16	Hunniston, W. H.....	"
1	G. B. Childs	"	17	Kain, S. C	"
2	Chas. W. Walters.....	"	18	Leland, Wm	"
	<i>Farriers.</i>		19	Maxson, W. B....	"
1	.....		20	Morgan, Y. Peyton.....	"
2	.....		21	Lamprecht, Wm. H....	"
	<i>Blacksmiths.</i>		22	Pennington, Chas. H...	"
1	.....		23	Perkins, Douglas	"
2	.....		24	Parmelee, Robert M....	"
	<i>Saddler.</i>		25	Prior, L. W.....	"
1	.....		26	Rause, Benjamin L....	"
	<i>Wagoner.</i>		27	Smith, Jos. W.....	"
1	.....		28	Stevens, H. S.....	"
			29	Stone, D. E....	"
			30	Sheppey, George M....	"
			31	Scotfield, Wm. M.....	"
			32	Williams, Henry A	"

Strength of Troop, 49.

FIRST REGIMENT LIGHT ARTILLERY.

FIELD AND STAFF OFFICERS.

Louis Smithnight.....	Colonel.
George Sintz.....	Lieut.-Colonel.
Edmund C. Brush.....	Major.
Edward O. Dana.....	Major.
Henry M. Clewell.....	Adjutant.
Alex. C. Caine.....	Quartermaster.
Thomas J. Cronise.....	Surgeon.
B. B. Brashear.....	Asst. Surgeon.
L. B. Moore.....	Chaplain.

Non-Commissioned Staff and Band, with dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
	<i>Drum Major.</i>			<i>Musicians—Continued.</i>	
1	Joseph Schmidt.....	June 17, 1887.	7	Kapl, John.....	June 23, 1887.
	<i>Leader.</i>		8	Masa, John.....	July 21, 1886.
			9	Maska, John.....	" 21, 1886.
1	Joseph Zamecnik.....	July 21, 1886.	10	Masek Joseph.....	" 21, 1886.
	<i>Musicians.</i>		11	Metlicka, Chas.....	" 21, 1886.
			12	Malec, Joseph.....	June 18, 1887.
1	Blasis, Louis.....	June 22, 1887.	13	Masten, I. J.....	" 28, 1887.
2	Hrubecky, John.....	July 21, 1886.	14	Spears, Francis.....	July 21, 1886.
3	Holan, John.....	" 21, 1886.	15	Svoboda, James.....	" 21, 1886.
4	Kestrauch, James.....	" 21, 1886.	16	Sebenek, Anton.....	June 18, 1887.
5	Kinkor, Frank.....	" 21, 1886.	17	Victovec, Frank.....	July 21, 1886.
6	Klika, Joseph.....	" 21, 1886.	18	Vokcan, Frank.....	" 21, 1886.
			19	Zamecnik, John.....	" 21, 1886.
			20	Zamecnik, John S.....	June 18, 1887.
			21	Zamecnik, Joseph J.....	" 18, 1887.

Strength of Field, Staff and Band, 32.

BATTERY A—CLEVELAND LIGHT ARTILLERY—Organized May 22, 1887.

OFFICERS.

.....	Captain.
Fred. A. Gay.....	1st Lieutenant.
Theo. F. McConnell.....	2d Lieutenant.
F. C. Franke	Assist. Surgeon.

Enlisted Men, with Date of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
	<i>Sergeants.</i>			<i>Veterinary Sergeant.</i>	
1	W. A. McIntire.....	Feb. 20, 1884.	1	.....	.....
2	Julius Blasis	April 13, 1883.		<i>Corporals.</i>	
3	W. A. McDonald	Feb. 23, 1887.			
4	Geo. McConnell.....	July 25, 1883.	1	J. T. Donahoe	May 24, 1883.
5	Geo. Paul.....	July 19, 1886.	2	J. W. McReynolds.....	Dec. 12, 1883.
	<i>Quartermaster Sergeant.</i>		3	E. V. Dorn	April 18, 1883.
			4	W. D. Fraser	Feb. 18, 1885.
1	John J. Feil	July 1, 1885.	5	Shell Goetz.....	Aug. 2, 1883.
			6	E. L. Gleason.....	Oct. 28, 1885.

BATTERY A—CLEVELAND LIGHT ARTILLERY—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
	<i>Trumpeter.</i>			<i>Privates—Continued.</i>	
1	Charles Hendiges.....	Aug. 10, 1885.	24	Kleinan, Gus.....	Mar. 2, 1883.
	<i>Privates.</i>		25	Koch, J. T.....	May 13, 1885.
1	Adams, Ira.....	June 20, 1883.	26	Kohler, C.....	Mar. 3, 1883.
2	Akin, Geo. W	Oct. 28, 1885.	27	Kulas, F. E.....	May 18, 1887.
3	Bailey, Geo.....	Mar. 8, 1886.	28	Keller, H. B.....	Sept. 14, 1887.
4	Bell, J. R... ..	Aug. 14, 1884.	29	Moore, Samuel F.....	July 27, 1886.
5	Brewer, E. R	July 29, 1886.	30	McReynolds, E. L	Jan. 27, 1887.
6	Baehr, J. H.....	May 18, 1887.	31	Menken, W. J.....	May 18, 1887.
7	Brown, A. E.....	June 29, 1887.	32	Newton, W. H.....	Dec. 5, 1882.
8	Campbell, C. D	June 16, 1887.	33	Powell, C.....	Mar. 31, 1886.
9	Carroll, John J.....	May 13, 1885.	34	Reiber, J. C.....	Feb. 1, 1883.
10	Donahoe, M. J.....	May 8, 1886.	35	Reynolds, Dan	June 17, 1885.
11	Daugherty, Elmer.....	July 27, 1886.	36	Saterfield, Archie.....	July 28, 1886.
12	Fisher, H. T.....	May 20, 1885.	37	Sayles, W. F.....	July 14, 1886.
13	Fulton, John... ..	July 29, 1886.	38	Schutthelm, F. W.....	July 1, 1885.
14	Gay, D. C	July 21, 1886.	39	Scobie, W. S.....	Dec. 12, 1883.
15	Goetz, E. P.....	Mar. 30, 1886.	40	Sichley, E. R.....	May 13, 1885.
16	Gray, James.....	July 7, 1886.	41	Smithnight, Albert....	May 5, 1883.
17	Griffen, John.....	"	42	Sichley, J. W.....	Feb. 1, 1885.
18	Hall, William.....	July 26, 1886.	43	Sillman, W. G.....	May 13, 1885.
19	Hatch, J. P. H.....	Mar. 19, 1884.	44	Seyler, Carl.....	Dec. 15, 1886.
20	Hanway, J. L.....	Oct. 27, 1886.	45	Seeholzer, Albert.....	Sept. 14, 1887.
21	Hanway, William.....	June 29, 1887.	46	Trottner, Phil	May 5, 1883.
22	Johnson, Henry.....	July 27, 1886.	47	Wade, E. E.....	May 8, 1886.
23	Johnson, Fred.....	"	48	Webb, E. A.....	July 6, 1887.
			49	Wagner, F. A.....	Sept. 14, 1887.

Strength of Battery, 65.

BATTERY B—CINCINNATI—Organized May 22, 1873.

OFFICERS.

William G. Smith Captain.
Frank D. McCarthy.....1st Lieutenant.
Collin J. Forbes2d Lieutenant.
.....2d Lieutenant.
Emil V. HelfferichAssist. Surgeon.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
	<i>Sergeants.</i>			<i>Corporals.</i>	
1	T. Hermann.....	Dec. 12, 1882.	1	G. Freizer	Sept. 12, 1884.
2	C. J. Neare	April 13, 1885.	2	J. Kelso	June 24, 1885.
3	A. J. Chambers	Sept. 8, 1884.	3	.....	.....
4	J. T. Bryant.....	April 6, 1885.	4	.....	.....
5	.....	.....	5	.....	.....
	<i>Quartermaster-Sergeant.</i>		6	.....	.....
1	F. S. DeCamp	Jan. 8, 1885.	7	.....	.....
	<i>Veterinary Sergeant.</i>		8	.....	.....
1	M. Forbus.....	Nov. 22, 1882.		<i>Trumpeters.</i>	
			1	J. Reibel	Nov. 24, 1884.
			2	L. B. Hall	Dec. 27, 1886.

BATTERY B—CINCINNATI—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
	<i>Guidon.</i>			<i>Privates—Continued.</i>	
1	H. J. Hermann.....	Mar. 14, 1887.	17	McLean, S.....	Nov. 14, 1886.
	<i>Privates.</i>		18	McCormick, J. G.....	June 26, 1886.
1	Allen, J.....	June 19, 1883.	19	McIntire, M. B.....	June 7, 1886.
2	Bradbury, G. M.....	June 29, 1886.	20	More, J. G.....	Mar. 22, 1886.
3	Brooke, W. M.....	Aug. 2, 1886.	21	Myers, Harvy S.....	.....
4	Crone, E.....	Feb. 23, 1885.	22	Minshell, F. H.....	Dec. 15, 1886.
5	Cotteral, A. R.....	May 24, 1886.	23	Monroe, C. E.....	May 24, 1886.
6	Chelton, W. W.....	Aug. 2, 1886.	24	Magee, W. J.....	June 2, 1886.
7	Colling, J. T.....	Aug. 17, 1885.	25	Morgan, G.....	May 10, 1886.
8	Elwood, F. E.....	Sept. 30, 1886.	26	Morgan, F.....	May 24, 1886.
9	Fagin, Thos.....	June 26, 1886.	27	Mohrmyer.....	June 21, 1886.
10	Gulden, C.....	June 21, 1886.	28	Osterbrook, W. A.....	"
11	Gott, F. E.....	June 22, 1885.	29	Pollock, C. G.....	May 24, 1886.
12	Gross, Nicholas.....	.....	30	Shillito, J. S.....	Aug. 30, 1886.
13	Harman, W. G.....	.....	31	Schweizer, W.....	Feb. 20, 1883.
14	Haufbrauer, C. H.....	June 29, 1886.	32	Springard, J. G.....	May 24, 1886.
15	Haines, C. H.....	Oct. 25, 1886.	33	Spencer, Frederick.....	Feb. 20, 1883.
16	Ireland, P. D.....	June 21, 1886.	34	Theise, H.....	June 21, 1886.
			35	Ward, E.....	May 8, 1885.

Strength of Battery, 51.

BATTERY C—ZANESVILLE—Organized April 20, 1886.

OFFICERS.

Henry A. LeslieCaptain.
J. William Koos1st Lieutenant.
Bennett L. Taylor.....2d Lieutenant.
William A. Scott.....2d Lieutenant.
Henry T. SuttonAsst. Surgeon.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
	<i>Sergeants.</i>			<i>Corporals.</i>	
1	Daniel H. Gaumer.....	April 20, 1886.	1	Asahel H. Dillon.....	April 27, 1886.
2	Frank Werner.....	"	2	George Ambler.....	May 17, 1887.
3	Charles Brendel, Jr.....	May 30, 1886.	3	William B. Worstall...	May 11, 1886.
4	Albert Bryan.....	July 5, 1887.	4	William E. Krebs.....	April 20, 1886.
5	George H. Chapman.....	May 8, 1886.	5	Frederick B. Mattingly	May 5, 1886.
	<i>Quartermaster-Sergeant.</i>		6	Warren W. Young.....	April 20, 1886.
1	George R. Clements.....	May 4, 1886.	7	Charles E. Willey.....	June 18, 1886.
	<i>Veterinary Sergeant.</i>		8	John S. Derwacter.....	April 20, 1886.
1	William H. Rogge.....	May 8, 1886.		<i>Trumpeters.</i>	
			1	Charles Farrell.....	April 20, 1886.
			2	George B. Turner.....	May 24, 1887.

BATTERY C—ZANESVILLE—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Privates.</i>			<i>Privates—Continued.</i>		
1	Ambrose, Harry.	April 20, 1886.	16	Miller, Charles H.....	June 28, 1887.
2	Booker, David.....	April 27, 1886.	17	Osimond, Joseph.....	June 10, 1887.
3	Carroll, Warren A.....	Jan. 10, 1887.	18	Osborne, Frederick.....	May 24, 1887.
4	Carroll, Clarence	Sept. 6, 1887.	19	Perry, Harry J.....	June 10, 1887.
5	Colston, Philip	Feb. 25, 1887.	20	Parsons, Edgar M.	June 14, 1887.
6	Draper, Charles.....	May 28, 1887.	21	Parshall, Goodrel B....	Sept. 20, 1887.
7	Foy, Philander... ..	June 14, 1887.	22	Scoles, William.....	Mar. 1, 1887.
8	Harris, Thomas	May 10, 1886.	23	Shryock, Charles U.....	April 20, 1886.
9	Hammock, O. S	Sept. 6, 1887.	24	Skinner, L. Rod	June 14, 1887.
10	Lane, Miles S	Jan. 26, 1887.	25	Shumaker, Harry A....	May 24, 1887.
11	Lauterbach, John	May 13, 1887.	26	Talbot, Alfred Y	June 10, 1887.
12	Leslie, Frank C.....	June 28, 1887.	27	Tate, Bert	July 20, 1887.
13	Llewellyn, Richard	Sept. 20, 1887.	28	Wells, Hamilton E.....	June 10, 1887.
14	Leutz, Fred. S.....	Nov. 1, 1887.	29	Wisehart, Joseph E....	July 5, 1887.
15	Martin, Claude V.....	June 14, 1887.	30	Warner, George S	Sept. 20, 1887.

Strength of Battery, 52.

BATTERY D—TOLEDO LIGHT ARTILLERY—Organized November 23, 1872.

OFFICERS.

Owen J. HopkinsCaptain.
Louis Kimmerlen.....1st Lieutenant.
Furman Upham.....2d Lieutenant.
George U. Roulet.....2d Lieutenant.
W. W. Cullison.....Assist. Surgeon.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Sergeants.</i>			<i>Trumpeters.</i>		
1	Mathew Revel.....	May 23, 1887.	1	Charles Winters	July 8, 1887.
2	Geo. Fraser.....	Feb. 26, 1883.	2	Jackson Deneal... ..	July 13, 1885.
3	Hazen D. Norton.....	July 8, 1887.	<i>Guidon.</i>		
4	Oliver P. Hopkins.....	July 10, 1885.	<i>Privates.</i>		
5	W. J. Baker	Sept. 5, 1887.	1	W. A. Stamer	Aug. 20, 1885.
<i>Quartermaster Sergeant.</i>			<i>Privates.</i>		
1	Charles W. Waite.....	April 6, 1885.	1	Boudrie, D. E.....	Aug. 9, 1886.
<i>Veterinary Sergeant.</i>			2	Boudrie, Joseph M....	"
1	S. G. Van Buren.....	Dec. 18, 1882.	3	Baertschi, N.....	Aug. 13, 1886.
<i>Corporals.</i>			4	Boddy, Louis H.....	June 27, 1887.
1	Harry B. Eley....	May 23, 1885.	5	Carpenter, A. S.....	Feb. 12, 1883.
2	J. Grant Tanner.....	June 20, 1887.	6	Crane, Herbert	July 13, 1885.
3	Joseph B. Bloss.....	Aug. 5, 1887.	7	Clark, James	Oct. 10, 1887.
4	W. F. Reid.....	Aug. 12, 1887.	8	Dorr, Charles A.:	Sept. 29, 1887.
6	Will H. Brown.....	Oct. 6, 1884.	9	Funk, R. B.....	May 9, 1887.
6	W. R. Hannan.....	Mar. 31, 1884.	10	Fontaine, N. A.....	Aug. 5, 1887.
7	Thomas Carr	Feb. 15, 1886.	11	Greening, Harry	May 25, 1887.
8	August Gossman.....	Aug. 17, 1885.	12	Johnson, F. A.....	Aug. 9, 1886.
			13	Jeffrey, W. F.....	Sept. 9, 1887.
			14	Kohler, Edward.....	May 25, 1887.
			15	Kelley, P.....	Aug. 8, 1887.

BATTERY D—TOLEDO LIGHT ARTILLERY—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Privates—Continued.</i>			<i>Privates—Continued.</i>		
16	Labarge, Peter	July 10, 1885.	27	Raudabaugh, P. H.	Oct. 24, 1887.
17	Laird, Archie	Feb. 15, 1886.	28	Schreppel, William.....	Aug. 9, 1886.
18	Meissner, Otto	July 2, 1883.	29	Taylor, Frank A.....	Aug. 31, 1885.
19	Meissner, John A	Feb. 1, 1884.	30	Teft, Frank	July 6, 1887.
20	Nants, Alfred	May 7, 1883.	31	Upham, Clarence.....	Aug. 4, 1884.
21	Nitschke, Geo E.....	Oct. 17, 1887.	32	Vetter, Wm.....	Aug. 9, 1886.
22	O'Dell, R. B	Aug. 9, 1886.	33	Vetter, Joseph.....	Aug. 13, 1886.
23	Perry, Thomas H.....	June 20, 1887.	34	Vena, Edward.....	"
24	Potter, Curtis	Sept. 5, 1887.	35	Vena, William.....	July 8, 1887.
25	Potter, Joseph.....	Sept. 23, 1887.	36	Wright, L. D.....	Apr. 6, 1885.
26	Reinbold, Joseph.....	Feb. 15, 1886.	37	Westmeyer, George	May 23, 1887.

Strength of Battery, 50.

BATTERY E—SPRINGFIELD LIGHT ARTILLERY—Organized July 19, 1881.

OFFICERS.

John G. Kennan.....Captain.
James C. Ogden.....1st Lieutenant.
Horace E. Smith.....2d Lieutenant.
Edgar E. Peters.....2d Lieutenant.
Allen H. VanceAsst. Surgeon.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Sergeants.</i>			<i>Wagoner.</i>		
1	Robert H. Magaw.....	Oct. 15, 1887.	1	.....	.....
2	Pearl S. Alexander.....	July 11, 1883.	<i>Guidon.</i>		
3	Joseph C. Wilbirt.....	July 19, 1886.	<i>Privates.</i>		
4	William B. Hershey.....	May 24, 1886.	1	Rollin Moffat.....	June 22, 1885.
5	Ellsworth L. Baker.	July 23, 1884.	<i>Privates.</i>		
<i>Quartermaster-Sergeant.</i>			1	Baker, Clark C.....	June 2, 1884.
1	Lorin A. Matsker.....	Apr. 14, 1884.	2	Bennett, Ernest L	May 8, 1886.
<i>Veterinary Sergeant.</i>			3	Bowlus, Frank C.....	July 23, 1883.
1	Jacob N. Grisso.....	June 16, 1884.	4	Chase, George H	Mar. 30, 1887.
<i>Corporals.</i>			5	Click, Samuel A.....	May 30, 1887.
1	John J. Hoppes.....	Aug. 1, 1884.	6	Coles, George H.....	May 6, 1884.
2	Charles A. Coles.....	" 3, 1885.	7	Corwin, Elmer E.....	June 16, 1884.
3	John Izer.....	" 2, 1887.	8	Corwin, Stephen D.....	July 28, 1884.
4	Edward Ruck.....	Apr. 6, 1883.	9	Cutright, Simeon J.....	April 29, 1884.
5	Henry H. Boggs.....	Aug. 3, 1885.	10	Clark, William.....	July 20, 1886.
6	Jacob Cooper.....	Apr. 21, 1884.	11	Dillahunt, Charles A...	Nov. 29, 1884.
7	Calvin Flohre.....	June 21, 1886.	12	Dillahunt, Oliver	June 14, 1886.
8	.....	.....	13	Donahue, Mack A	May 4, 1886.
<i>Musicians.</i>			14	Frock, Harry A.....	" 26, 1885.
1	John B. Stroup.....	Oct. 9, 1883.	15	Funk, John H.....	July 17, 1886.
2	John N. Worthington..	Aug. 1, 1884.	16	Grisso, Oron.....	June 14, 1886.
			17	Haling, Charles A.....	Apr. 20, 1886.
			18	Hames, Morton.....	Aug. 4, 1884.
			19	Heckman, Anthony W.	May 14, 1887.
			20	Jackson, George.....	Aug. 3, 1883.
			21	Knox, John.....	July 19, 1886.

BATTERY E—SPRINGFIELD LIGHT ARTILLERY—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Privates—Continued.			Privates—Continued.		
22	Kummer, William.....	May 5, 1884.	35	Ryder, Delmer.....	June 14, 1886.
23	Laybourne, Charles W.	Feb. 18, 1884.	36	Shepard, John G.....	Mar. 29, 1887.
24	Maccabee, David	July 13, 1886.	37	Shisler, Jacob S.....	Jan. 29, 1887.
25	Meehfelt, Adam J.	June 14, 1886.	38	Smith, Grant M.....	Oct. 12, 1887.
26	Merkley, Grant.....	Jan. 10, 1887.	39	Snell, Ellsworth.....	Dec. 1, 1884.
27	Miller, William H.....	Apr. 28, 1884.	40	Taylor, John D.....	July 21, 1886.
28	Moore, Benjamin L.....	May 3, 1886.	41	Tiedemann, Lewis.....	May 23, 1887.
29	Morgan, George W.....	Apr. 26, 1886.	42	Turner, Walter W.....	June 30, 1887.
30	McClure, William H....	May 24, 1886.	43	Steinhour, Jacob W....	Feb. 4, 1884.
31	McIntyre, Oliver K.....	Aug. 4, 1884.	44	Webster, John W.....	May 31, 1886.
32	Nation, William F.....	June 14, 1886.	45	Wentz, Shelby.....	" 19, 1884.
33	Nichols, Pearl C.....	Mar. 25, 1884.	46	Winch, Charles E... ..	June 30, 1884.
34	Payne, William F.....	Oct. 1, 1883.			

Strength of Battery, 68.

BATTERY F—AKRON—Organized November 26, 1877.

OFFICERS.

Joseph C. Ewart.....Captain.
George W. Workman1st Lieutenant.
James D. Chandler2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Sergeants.			Guidon.		
1	Peter Pfeifer	Oct. 1, 1883.	1	W. T. Alexander	July 5, 1887.
2	Henry C. Marshall	Dec. 1, 1884.	Privates.		
3	J. N. Baxter.....	Feb. 14, 1887.	1	Albright, John	Nov. 7, 1886.
4	John Benn	July 22, 1886.	2	Alexander, Alvin	July 5, 1887.
5	Wm. Corbin.....	Apr. 30, 1883.	3	Boughton, J. Fred.....	Jan. 5, 1885.
Quartermaster-Sergeant.			4	Brockway, Rial, Jr.....	July 12, 1886.
1	Alfred T. Pine.....	Aug. 14, 1884.	5	Brown, Frank.....	July 5, 1887.
Veterinary Sergeant.			6	Capron, Elmer C	July 6, 1887.
1	.....	.....	7	Capron, Ervin M.....	July 7, 1887.
Corporals.			8	Cramer, Arthur W	July 6, 1887.
1	Elias Hutz	May 15, 1884.	9	Claffin, Minor	July 29, 1886.
2	Ernest C. Housell	Mar. 22, 1886.	10	Casy, Thos. G.....	Apr. 17, 1884.
3	Antoine Engler	Sept. 29, 1885.	11	Dague, James.....	May 15, 1884.
4	Elsworth H. Longacre.	May 15, 1884.	12	Datcher, Thos H.....	July 5, 1887.
5	Charles A. Husong	May 28, 1883.	13	Fairbanks, John.....	April 3, 1884.
6	.....	.....	14	Fasig, Monroe.....	May 15, 1884.
7	.....	.....	15	Ganthier, John	June 15, 1885.
8	.....	.....	16	Gross, George	July 5, 1887.
Trumpeters.			17	Gossett, Daniel	"
1	William Thornton	May 15, 1884.	18	Hodges, Tyler	Aug. 4, 1884.
2	George Potter	Apr. 23, 1885.	19	Heath, Alvin D.....	July 12, 1886.
			20	Hayes, John R	June 9, 1884.
			21	Hittabiddle, Burt J....	Sept. 12, 1887.
			22	King, Harvy	July 7, 1887.
			23	Kroneich, Theodore ...	July 10, 1887.
			24	Lang, James	Mar. 28, 1887.
			25	Lewis, Richard D.....	May 6, 1886.

BATTERY F—AKRON—Continued.

No.	Name and Rank.	Date of en- listment.	No.	Name and Rank.	Date of en- listment.
<i>Privates—Continued.</i>			<i>Privates—Continued.</i>		
26	McBride, Martin	Apr. 21, 1886.	33	Sprankle, Dan. W	Aug. 16, 1885.
27	McElcarr, John	May 18, 1885.	34	Sherbondy, George.....	July 27, 1885.
28	Pine, Ben. F.....	Nov. 6, 1886.	35	Tucker, Chas	Jan. 18, 1886.
29	Richard, John B.....	Sept. 29, 1885.	36	White, John.....	June 15, 1885.
30	Story, John	July 27, 1885.	37	Williard, Homer	Apr. 13, 1885.
31	Stein, George W.....	May 25, 1885.	38	Westfall, John	Apr. 15, 1885.
32	Sprankle, Frank.....	July 15, 1883.	39	Werni, Antoine	Feb. 8, 1886.

Strength of Battery, 56.

BATTERY G—PUTNAM LIGHT ARTILLERY, MARIETTA—Organized January 8, 1878

OFFICERS.

Charles A. Miller.....Captain.
David Dow1st Lieutenant.
John C. Goldsmith....2d Lieutenant.
James H. Parker2d Lieutenant.
Osmer M. WillisAssist. Surgecn.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of en- listment.	No.	Name and Rank.	Date of en- listment.
<i>Sergeants.</i>			<i>Wagoner.</i>		
1	Wm. H. H. Jett.....	Jan. 16, 1883.	1	.....	.....
2	Joseph Hill.....	"	<i>Privates.</i>		
3	Henry J. Spies	May 5, 1884.	1	Anders, Chris	Sept. 6, 1886.
4	W. S. Davis	June 1, 1885.	2	Athey, Rufus.....	"
5	James Bishop	Feb. 2, 1885.	3	Bell, George.....	May 2, 1887.
<i>Quartermaster-Sergeant.</i>			4	Best, Henry	Jan. 1, 1883.
1	John Sheldon	July 12, 1885.	5	Booth, Frank.....	April 4, 1887.
<i>Veterinary Sergeant.</i>			6	Diedrick, Chris	Sept. 6, 1886.
1	Frank Preston	Apr. 15, 1885.	7	Dye, Ford	June 14, 1886.
<i>Corporals.</i>			8	Finch, James H	May 2, 1887.
1	Philip Spies	Nov. 26, 1883.	9	Fischer, Edward O	Feb. 2, 1885.
2	Edward Best	May 19, 1885.	10	Hadley, Thomas J.....	June 14, 1886.
3	Almer B. Preston.....	May 10, 1886.	11	Hill, Silas.....	Apr. 15, 1885.
4	John P. Bell	"	12	Hutchinson, L. M.....	Apr. 4, 1887.
5	Fred. Fischer.....	June 7, 1886.	13	Hyler, Charles.....	Apr. 18, 1887.
6	Chase Shepard.....	June 1, 1885.	14	Judd, James S.....	Nov. 26, 1883.
7	Edward W. Jones	May 5, 1884.	15	Kaiser, John	Oct. 4, 1886.
8	John W. Koenig	"	16	Lattaner, John P.....	May 5, 1884.
<i>Musicians.</i>			17	Mackey, Noble	Mar. 30, 1885.
1	Walter C. Short.....	April 4, 1887.	18	McAllister, John	Sept. 6, 1886.
2	Myron J. Browning....	Sept. 6, 1886.	19	McCall, John	"
			20	McKibben, Charles A...	May 10, 1886.
			21	McKibben, George	June 14, 1886.
			22	McMillen, Sanford T...	June 1, 1883.
			23	Miraben, Lee	May 20, 1883.
			24	Miraben, Matt.....	June 1, 1885.
			25	Morgareidge, Louis.....	"
			26	Oliver, Charles	Oct. 1, 1884.
			27	Parker, Charles.....	June 1, 1885.

BATTERY G—PUTNAM LIGHT ARTILLERY, MARIETTA—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Privates—Continued.</i>			<i>Privates—Continued.</i>		
28	Perkins, Jr., F. T.....	Apr. 4, 1887.	38	Steen, Clarence E.....	Feb. 8, 1885.
29	Putnam, Rolla G	May 26, 1884.	39	Steen, John.....	Sept. 6, 1886.
30	Rech, Charles H	June 14, 1886.	40	Suder, Henry.....	Oct. 3, 1887.
31	Reeves, Alonzo.....	"	41	Suder, Louis	May 2, 1883.
32	Reeves, Frank.....	June 7, 1886.	42	Twiggs, Edgar	Oct. 4, 1886.
33	Reeves, W. G.....	April 4, 1887.	43	Warren, W. M	Apr. 18, 1887.
34	Robinson, Ernest R.....	"	44	Wilderman, John	June 9, 1886.
35	Robinson, George E.....	May 26, 1884.	45	Whitney, Peter T	May 2, 1887.
36	Schramm, George W....	May 10, 1886.	46	Whitney, Wm. T.....	May 21, 1887.
37	Smith, Clayton B.....	May 24, 1886.			

BATTERY H—COLUMBUS LIGHT ARTILLERY—Organized April 9, 1884.

OFICERS.

Eli G. Donaldson.....Captain.
.....1st Lieutenant.
Charles Hartman.....2d Lieutenant.
Arthur A. Thomen.....Assist. Surgeon.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Sergeants.</i>			<i>Guidon.</i>		
1	Edward E. Creighton...	June 30, 1884.	1	William Austill.....	April 9, 1884.
2	John Ebenhoch	April 9, 1884.	<i>Privates.</i>		
3	Louis A. Frankenberg.	"	1	Alexander, William.....	Feb. 15, 1886.
4	William Bues	Apr. 20, 1885.	2	Arden, Elmer E.....	May 18, 1885.
5	.....	.....	3	Atkinson, Thomas	June 7, 1886.
<i>Quartermaster-Sergeant.</i>			4	Allen, David	Aug. 16, 1886.
1	.....	.....	5	Agin, Stephen.....	Nov. 27, 1886.
<i>Veterinary Sergeant.</i>			6	Butcher, Hayman.....	July 7, 1884.
1	John L. Brown.....	July 6, 1887.	7	Belt, Charles H.....	June 28, 1886.
<i>Corporals.</i>			8	Bauer, William.....	July 6, 1887.
1	John T. Evans	April 9, 1884.	9	Calvor, Louis T.....	Apr. 27, 1885.
2	Joseph Powell.....	"	10	Creviston, William A.	June 27, 1887.
3	William Byron.....	"	11	Denis, Frederick	Mar. 30, 1885.
4	Thomas Dalton.....	Feb. 28, 1887.	12	Dissinger, Charles.....	Sept. 30, 1884.
5	.....	.....	13	Edwards, John.....	April 9, 1884.
6	.....	.....	14	Flinn, R. L.....	June 23, 1884.
7	.....	.....	15	Fetters, Jacob	Nov. 10, 1884.
8	.....	.....	16	French, Frank	April 9, 1884.
<i>Trumpeters.</i>			17	Golliday, George	June 29, 1885.
1	.....	.....	18	Garrett, Frank	Feb. 15, 1886.
2	.....	.....	19	Goltzene, Charles.....	June 27, 1887.
			20	Gimeinhart, Frank.....	June 7, 1886.
			21	Hampson, William.....	April 9, 1884.
			22	Hampson, Charles	Oct. 6, 1884.
			23	Hale, Charles.....	July 14, 1886.
			24	Holzbacker, Edward ...	June 27, 1887.
			25	Harmon, William.....	"

BATTERY H—COLUMBUS LIGHT ARTILLERY—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
	<i>Privates—Continued.</i>			<i>Privates—Continued.</i>	
26	Jones, Edward	Apr. 27, 1885.	39	Rower, Robert	Feb. 28, 1887.
27	Johnson, George P.....	July 20, 1885.	40	Smith, Henry.....	April 9, 1887.
28	Koegel, John A.....	April 9, 1884.	41	Sunker, John.....	Apr. 30, 1884.
29	Kiestenhaver, John....	June 27, 1887.	42	Short, L. K.....	April 9, 1884.
30	Landauer, George.....	June 29, 1885.	43	Short, G. I.....	"
31	Morrison, Martin.....	April 9, 1884.	44	Schart, John	Sept. 29, 1886.
22	Mettge, William.....	Aug. 16, 1886.	45	Snably, Frank B	Sept. 27, 1886.
33	McGarity, Edward	June 27, 1887.	46	Townsley, Henry E.....	July 14, 1886.
34	Newman, Charles	July 14, 1886.	47	Van Heyde, Charles....	April 9, 1884.
35	Pletz, Charles A.....	Dec. 22, 1884.	48	Walter, John.....	Feb. 28, 1887.
36	Patton, Charles E	June 27, 1887.	49	Zinck, John H.....	June 28, 1886.
37	Ryland, Alfred M.....	June 23, 1884.	50	Zimmer, John.....	June 27, 1887.
38	Reincke, Alexander F..	Jan. 4, 1886.			

Strength of Battery, 63.

FIRST REGIMENT OF INFANTRY.

FIELD AND STAFF OFFICERS.

Frederick W. Moore.....Colonel.
 Morton L. Hawkins.....Lieut.-Colonel.
 James Pettibone.....Major.
 Abraham L. Whitney.....Major.
 Charles Z. Riley.....Adjutant.
 E. J. Lukens.....Quartermaster.
 A. E. JonesSurgeon.
 Anderson N. Ellis.....Assist. Surgeon.
 John H. Ely.....Chaplain.

Non-Commissioned Staff and Band, with dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
	<i>Sergeant-Major.</i>			<i>Musicians.</i>	
1	Francis M. Riddle.....	Mar. 22, 1886.	1	Auger, Daniel.....	Mar. 5, 1885.
	<i>Quartermaster-Sergeant.</i>		2	Baldwin, George W.....	June 13, 1887.
1	Michael J. Malone.....	Nov. 8, 1886.	3	Ballhous, Louis.....	Mar. 5, 1885.
	<i>Com.-Sergeant.</i>		4	Broxton, Henry.....	"
1	George J. Hopf.....	Mar. 13, 1883.	5	Butler, John	June 29, 1886.
	<i>Hospital Steward.</i>		6	Early, George	Jan. 12, 1886.
1	John Bauer.....	June 1, 1885.	7	Grapes, William.....	Mar. 3, 1883.
	<i>Principal Musicians.</i>		8	Green, James.....	Oct. 1, 1883.
1	Phillip Bauer.....	June 29, 1886.	9	Hessing, Henry C.....	Mar. 5, 1885.
2	.....	.....	10	Hesterberg, Robert.....	July 3, 1887.
	<i>Leader.</i>		11	Herron, James	Mar. 14, 1884.
1	Harry St. George.....	Nov. 4, 1884.	12	Kohlbrand, Edward.....	Mar. 5, 1885.
			13	Klots, John.....	"
			14	Lewis, Charles L.....	Mar. 3, 1883.
			15	Lewis, D. A ..	Aug. 2, 1885.
			16	Lowenstein, Jacob	Mar. 2, 1885.
			17	Martenzeck, E.....	July 1, 1883.
			18	Menday, George.....	Mar. 3, 1883.
			19	Mullen, Simon.....	"
			20	Reese, John	Nov. 14, 1884.
			21	Sower, John.....	Mar. 5, 1885.
			22	Smith, George C.....	June 22, 1885.
			23	Smith, Edward.....	Dec. 1, 1885.

Strength of Field, Staff and Band, 38.

Co. A—WAYNE GUARD, CINCINNATI—Organized August 13, 1878.

OFFICERS.

Charles Becht.....Captain.
H. E. Kennedy.....1st Lieutenant.
.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Sergeants.			Privates.		
1	Clifton Buck.....	June 16, 1884.	1	Auraden, John.....	Oct. 1, 1887.
2	Gus Hambrock.....	May 1, 1885.	2	Burns, John.....	May 26, 1885.
3	H. L. Brown.....	June 7, 1886.	3	Conrad, Peter.....	Aug. 4, 1885.
4	Fred. Becht.....	May 26, 1885.	4	Crandall, Samuel.....	July 9, 1884.
5	.....	.....	5	Eiche, Oscar.....	June 7, 1886.
Corporals.			6	Gold, John.....	Aug. 25, 1885.
1	Frank Long.....	July 13, 1884.	7	Greve, Benjamin.....	Dec. 1, 1885.
2	John Buhrer.....	Dec. 1, 1885.	8	Geldrich, Albert.....	June 13, 1885.
3	Samuel Cady.....	Feb. 11, 1884.	9	Hotel, Henrie.....	Aug. 27, 1885.
4	Wm. Hastic.....	Oct. 10, 1883.	10	Ladley, Joe.....	June 16, 1885.
5	Fred. Singleton.....	April 21, 1885.	11	McMunn, Del.	Nov. 3, 1884.
6	V. L. Rockfield.....	June 1, 1885.	12	McCauley, Chas.	Dec. 1, 1885.
7	Joe Young.....	June 9, 1884.	13	Maithre, Wm.....	April 27, 1885.
8	.....	.....	14	Meyers, Henry.....	Nov. 29, 1886.
Musicians.			15	Meyers, Chas.	Mar. 1, 1887.
1	Wm. Boesch.....	July 2, 1883.	16	McCann, James.....	Sept. 24, 1883.
2	Nicholas Brech.....	" 2, 1883.	17	O'Shea, Daniel J.....	Nov. 29, 1886.
Wagoner.			18	Prickett, John.....	Sept. 24, 1883.
1	.....	.....	19	Riggs, Ed.....	Oct. 1, 1887.
			20	Rudolph, Wm.....	April 8, 1886.
			21	Sollinger, Carl A.....	June 1, 1886.
			22	Smith, Wm.....	Dec. 1, 1885.
			23	Smith, Ed.....	July 9, 1884.
			24	Walters, Sebastian A...	June 7, 1886.
			25	Widemann, Joe.....	Nov. 14, 1884.
			26	White, Maurice.....	Sept. 24, 1883.
			27	Woodruff, Wm. N.....	Nov. 29, 1886.
			28	Woodruff, Walter E.....	May 2, 1887.
			29	Young, Samuel.....	Feb. 5, 1883.

Strength of Company, 44.

Co. B—THE LITTLE GREYS, CINCINNATI—Organized April 23, 1870.

OFFICERS.

Ernst P. Dietz.....Captain.
Charles E. Littell.....1st Lieutenant.
Charles H. Jones.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Sergeants.			Corporals.		
1	1	Wm. H. Murray.....	Jan. 10, 1887.
2	Harry C. Williams.....	Nov. 4, 1874.	2	John E. Burke.....	July 31, 1883.
3	3	George M. Birdsong.....	Dec. 16, 1884.
4	4	Elmer D. Sanford.....	Dec. 23, 1884.
5	5	Robert L. Davis.....	May 12, 1885.

Co. B—LYTLE GREYS—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Corporals—Continued.</i>			<i>Privates—Continued.</i>		
6	John E. Gourjon.....	June 17, 1885.	3	Burkhardt, Philip.....	Sept. 20, 1887.
7	Daniel O. Laws.....	" 17, 1885.	4	Cook, Harry A.....	May 2, 1887.
8	.....	.....	5	Dobb, William C.....	Sept. 10, 1886.
<i>Musicians.</i>			6	Daniel, Walter B.....	Aug. 10, 1886.
1	Vogtman William.....	May 16, 1885.	7	Edwards, Harry D.....	June 20, 1886.
2	.....	.....	8	Fuchs, Alexander H...	" 24, 1886.
<i>Wagoner.</i>			9	Grovane, John F.....	Feb. 15, 1887.
1	.....	.....	10	Grear, Frank.....	Mar. 22, 1887.
<i>Privates.</i>			11	Holden, Charles.....	Apr. 1, 1885.
1	Bishop, Edward L.....	June 2, 1886.	12	Hopper, Aaron.....	Apr. 27, 1886.
2	Bishop, Howard C.....	" 2, 1886.	13	Mackey, Thomas A.....	July 27, 1886.
			14	Robinson, Albert C....	June 15, 1886.
			15	Shearer, William H....	May 26, 1883.
			16	Simmonds, Harry L...	Mar. 16, 1886.
			17	Swift, James.....	Sept. 1, 1885.
			18	Schroeder, Gustavus A.	Sept. 6, 1885.
			19	Taylor, Charles, Jr....	Jan. 26, 1885.

Strength of Company, 31.

Co. C—HUNT RIFLES, CINCINNATI—Organized April 13, 1881.

OFFICERS.

Geo. Brenner.....Captain.
 John Proctor.....1st Lieutenant.
2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Sergeants.</i>			<i>Privates.</i>		
1	Alex. Mehaffey.....	April 25, 1885.	1	Avery, Charles E.....	Feb. 11, 1887.
2	Wm. A. Bergin.....	April 16, 1886.	2	Baker, J. R.....	June 4, 1887.
3	Ferd. Grillo ..	June 22, 1886.	3	Batchelor, F. T.....	Sept. 12, 1887.
4	.....	.....	4	Barrett, Wm.....	Oct. 27, 1885.
5	.....	.....	5	Buttman, Theo.....	June 22, 1886.
<i>Corporals.</i>			6	Bergin, Jos.....	Apr. 15, 1887.
1	A. Eichelberger.....	Apr. 16, 1886.	7	Beebe, Walter.....	Apr. 26, 1887.
2	Geo. Nunn.....	Apr. 13, 1885.	8	Campbell, Sherman....	Jan. 12, 1883.
3	Wm. Hayes.....	Apr. 8, 1885.	9	Dieckman, Louis.....	May 3, 1886.
4	D. H. Bultman.....	Sept. 17, 1886.	10	Dunlap, John.....	Dec. 21, 1885.
5	.....	.....	11	Fenwick, Harry.....	June 23, 1886.
6	.....	.....	12	Hennekes, George.....	May 16, 1884.
7	.....	.....	13	Holthaus, Chas.....	June 14, 1886.
8	.....	.....	14	Humphreys, Samuel...	July 15, 1886.
<i>Musicians.</i>			15	Hartwig, William.....	Sept. 15, 1886.
1	Wm. Brenner.....	June 11, 1885.	16	Gramer, George.....	June 8, 1886.
2	Jos. G. Rhein.....	June 25, 1886.	17	McKeon, John.....	Oct. 11, 1886.
<i>Wagoner.</i>			18	Murray, John A.....	April 5, 1885.
1	.....	.....	19	McGovern, Chas.....	Mar. 4, 1887.
			20	Mangold, John H.....	Apr. 1, 1887.
			21	Niehaus, Edward.....	June 28, 1886.
			22	Peppard, Wm. C.....	Oct. 22, 1887.
			23	Reineke, Wm.....	July 23, 1886.
			24	Rothaker, F. S.....	Dec. 17, 1886.
			25	Smith, Harry.....	Oct. 29, 1885.
			26	Smith, Wm. C.....	Sept. 28, 1883.
			27	Troeger, Thomas.....	April 6, 1885.
			28	Wettengel, Val. P.....	Apr. 20, 1885.
			29	Williams, J. B.....	Apr. 16, 1886.

Strength of Company, 40.

Co. D—GARFIELD RIFLES, CINCINNATI—Organized June 1, 1885.

OFFICERS.

T. W. Thomas Captain.
R. D. Carver.....1st Lieutenant.
P. R. Otis.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Sergeants.			Privates—Continued.		
1	Charles Koeniger.....	June 17, 1885.	5	Coleman, R.....	June 26, 1886.
2	John Murphy.....	"	6	David, F.....	July 4, 1886.
3	F. Stegner.....	June 1, 1885.	7	Eickbush, C.....	June 1, 1885.
4	Thos. F. Lynch.....	"	8	Eickbush, J.....	"
5	J. Conway.....	June 22, 1885.	9	Gramley, D. M.....	June 17, 1885.
Corporals.			10	Gramley, I.....	June 20, 1885.
1	John Kelsch.....	June 1, 1885.	11	Gries, Val.....	June 1, 1885.
2	Wm. Jonte.....	"	12	Heizelman, J.....	"
3	P. Dremon.....	"	13	Ismael. C.....	"
4	E. Ahlenstorf.....	Apr. 14, 1887.	14	Konschitzky, H.....	"
5	J. J. West.....	June 1, 1885.	15	Knost, J.....	June 23, 1885.
6	Louis Miller.....	Dec. 8, 1886.	16	Klinge, E.....	Mar. 17, 1887.
7	Ray Wolf.....	June 1, 1885.	17	Lillis, Thos.....	Oct. 9, 1886.
8	Aug. Reis.....	"	18	Lotz, Louis.....	June 1, 1885.
Musicians.			19	Ladenberger, J.	"
1	J. Dannaker.....	June 22, 1885.	20	Meador, F.....	"
2	D. Sellers.....	"	21	Moser, E.....	June 23, 1886.
Wagoner.			22	Morris, J.....	June 26, 1886.
1	.....	.....	23	Maxwell, M.....	June 22, 1885.
Privates.			24	Ramsdell, Chas.....	Apr. 14, 1887.
1	Burroughs, Wm.....	June 19, 1885.	25	Schlemer, Jos.....	Oct. 2, 1886.
2	Browne, E.....	June 23, 1885.	26	Sullivan, M. D.....	Nov. 16, 1886.
3	Bierman, G.....	June 7, 1886.	27	Schmelz, F.....	June 12, 1886.
4	Cronin, G.....	Nov. 10, 1885.	28	Schaller, J.....	June 23, 1886.
			29	Woodward, C.....	June 1, 1885.
			30	Walsh, R.....	"
			31	Wessel, H.....	"
			32	Waterman, Sol.....	"
			33	Williams, I. R.....	June 17, 1885.
			34	Williams, A. E.....	"
			35	Wunsch, H.....	Oct. 2, 1886.

Strength of Company, 53.

Co. E—HAMILTON LIGHT INFANTRY—HAMILTON—Organized October 4, 1875.

OFFICERS.

Charles L. Hunter Captain.
Frederick A. Rife1st Lieutenant.
.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Sergeants.			Corporals.		
1	.....	.....	1	Homer J. Shaffer.....	Nov. 25, 1885.
2	Frank S. Bristley.....	Sept. 1, 1885.	2	William Anderson.....	Mar. 25, 1885.
3	Hilkiah B. Gaff.....	Nov. 3, 1884.	3	Henry W. Lotz.....	Apr. 29, 1885.
4	James K. Webster.....	June 7, 1886.	4	Mathias Saurer.....	Apr. 15, 1885.
5	.....	.....	

Co. E—HAMILTON LIGHT INFANTRY—HAMILTON—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
	<i>Corporals—Continued.</i>			<i>Privates—Continued.</i>	
5	John Mueller.....	June 5, 1885.	10	Gressle, Edward T.....	Dec. 25, 1884.
6	Louis H. Smith.....	Dec. 10, 1884.	11	Hawk, William P.....	Dec. 24, 1884.
7	Charles A. Jones.....	Oct. 8, 1884.	12	Harrison, Robert J.....	Dec. 30, 1884.
8	.....	.....	13	Judge, Michael F.....	June 29, 1886.
	<i>Musicians.</i>		14	Kindred, George.....	April 1, 1887.
1	Wallace Kneese	Feb. 28, 1887.	15	Lyon, Benjamin.....	Dec. 6, 1886.
2	Cecile Miller.....	May 13, 1887.	16	Marand, William J.....	July 14, 1886.
	<i>Wagoner.</i>		17	Meyer, Louis.....	May 2, 1887.
1	.....	.....	18	Overmyer, Edward.....	Mar. 7, 1887.
	<i>Privates.</i>		19	Patten, Levertt L.....	Dec. 19, 1884.
1	Argadine, Warder H...	June 21, 1886.	20	Riley, John F.....	"
2	Ayers, George, Jr.....	Aug. 29, 1887.	21	Rolf, Albert.....	Dec. 27, 1886.
3	Conboy, John.....	June 6, 1883.	22	Ryan, Frank.....	Feb. 21, 1887.
4	Conboy, William.....	May 14, 1884.	23	Sallee, John G.....	May 9, 1887.
5	Cullen, Erastus.....	"	24	Sommers, David S.....	Aug. 12, 1884.
6	Decker, George.....	Nov. 27, 1883.	25	Snider, Julius.....	Dec. 10, 1884.
7	Dowling, Thomas B....	June 26, 1883.	26	Steen, Edwin E.....	Dec. 27, 1886.
8	Gardner, Albert.....	Feb. 23, 1886.	27	Schneider, Louis.....	Feb. 15, 1886.
9	Goodman, Frank.....	July 19, 1886.	28	Semler, John.....	July 19, 1886.
			29	Teimeyer, Edwin.....	Mar. 1, 1886.
			30	Teonnisson, Wm. H....	May 11, 1887.
			31	Wickert, Thomas.....	Mar. 11, 1885.
			32	Weismyer, Christian...	Feb. 4, 1885.
			33	Yauch, Frank.....	July 13, 1885.

Strength of Company, 47.

Co. F—MOORE LIGHT GUARD—CINCINNATI—Organized December 8, 1874.

OFFICERS.

..... Captain.
..... 1st Lieutenant.
Russell Pettibone 2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
	<i>Sergeants.</i>			<i>Musicians.</i>	
1	Louis R. Schaerges.....	June 3, 1885.	1	Brenner, Charles.....	June 3, 1885.
2	Louis A. Williams.....	"	2	Seissiger, Robert ..	July 3, 1883.
3	Charles F. Wegelin.....	May 27, 1885.		<i>Wagoner.</i>	
4	.....	.....	1	.....	.....
5	John T. Lawler.....	June 23, 1886.		<i>Privates.</i>	
	<i>Corporals.</i>		1	Bachelor, Wm. F.....	Sept. 14, 1887.
1	E. S. Jones.....	Oct. 27, 1885.	2	Bowman, William W..	June 17, 1885.
2	Joseph S. Herron.....	Dec. 8, 1886.	3	Buemler, George C.....	June 18, 1885.
3	.....	.....	4	Collins, John H.....	June 16, 1886.
4	.....	.....	5	Connell, Harry.....	Mar. 31, 1887.
5	.....	.....	6	Connors, John.....	Mar. 21, 1883.
6	.....	.....	7	Eichold, Charles.....	June 19, 1886.
7	.....	.....	
8	.....	.....	

Co. F—MOORE LIGHT GUARD—CINCINNATI—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Privates—Continued.</i>			<i>Privates—Continued.</i>		
8	Elder, George W	Feb. 7, 1883.	22	Newman, Edward B...	Oct. 17, 1883.
9	Gilbert, Albert L.....	Dec. 15, 1886.	23	Newman, Herman.....	"
10	Greaves, Albert	June 17, 1885.	24	Parks, Harry.....	Mar. 17, 1886.
11	Hampton, Harry P.....	Dec. 30, 1885.	25	Saunders, William D...	June 8, 1887.
12	Harmon, Charles M.....	July 5, 1885.	26	Schmalz, Frank	Apr. 22, 1885.
13	Higgins, Harry J.....	June 17, 1885.	27	Seissinger, Andrew.....	July 2, 1883.
14	Knusler, John.....	Dec. 30, 1885.	28	Sinex, William.....	Dec. 22, 1886.
15	Kessler, John.....	June 26, 1885.	29	Smith, Lewis S.....	May 10, 1882.
16	Kruse, Henry	June 13, 1887.	30	Tyrell, William	June 17, 1885.
17	Lauterback, William...	June 16, 1885.	31	Walters, David H.....	July 15, 1885.
18	Mack, William.....	June 19, 1886.	32	Wildman, George C. ...	Dec. 29, 1886.
19	Moore, Edward S	Dec. 15, 1886.	33	Williams, Edward	Mar. 31, 1887.
20	Mosser, Theodore.....	June 19, 1886.	34	Zimmerman, Fred.....	Apr. 22, 1885.
21	Niemyer, Edward	Apr. 29, 1885.			

Strength of Company, 44.

Co. H—ROBINSON LIGHT INFANTRY, CINCINNATI—Organized July 7, 1875.

OFFICERS.

John W. Carroll.....Captain.
 Thomas H. Wright.....1st Lieutenant.
 Harry W. Kent.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Sergeants.</i>			<i>Privates—Continued.</i>		
1	Frank N. Baker.....	Nov. 11, 1885.	4	Becker, William.....	Aug. 13, 1883.
2	Wm. H. Carroll.....	Aug. 16, 1885.	5	Biddle, William.....	Jan. 28, 1886.
3	John J. Burns.....	Nov. 12, 1885.	6	Boyd, Frank V.....	June 22, 1885.
4	John Van Duzen.....	May 19, 1887.	7	Boyd, Robert E.....	" 22, 1885.
5	Gus. Fleischer.....	Nov. 19, 1885.	8	Blice, Charles.....	" 25, 1885.
<i>Corporals.</i>			9	Best, John.....	Aug. 16, 1883.
			10	Campbell, H.....	June 3, 1886.
1	Wm. Mans.....	Sept. 10, 1885.	11	Church, Joseph H.....	" 11, 1885.
2	Jas. P. Jennings.....	June 19, 1885.	12	Corin, Volney.....	July 13, 1886.
3	Chas. C. DuChenin.....	Jan. 14, 1886.	13	Cameron, G. E.....	May 5, 1887.
4	.....	.....	14	Farrell, John.....	Oct. 25, 1883.
5	.....	.....	15	Fay, Daniel.....	June 3, 1886.
6	.....	.....	16	Finkenstedt, Charles..	Jan. 12, 1885.
7	.....	.....	17	Fleming, C. B.....	May 3, 1884.
8	.....	.....	18	Fleischer, E.....	May 19, 1887.
<i>Musicians.</i>			19	Gardner, Charles.....	Feb. 7, 1884.
1	Edwin Carroll.....	Jan. 12, 1885.	20	Hasenzahl, Theodore..	Jan. 19, 1885.
2	.....	.....	21	Havlin, Joseph.....	Sept. 10, 1885.
<i>Wagoner.</i>			22	Herbert, Charles V.....	June 11, 1885.
1	.....	.....	23	Hawkins, Percy.....	" 20, 1885.
<i>Privates.</i>			24	Heinze, Edward.....	Mar. 22, 1883.
1	Aydelotte, C. G	Sept. 10, 1885.	25	Hopf, George.....	Nov. 8, 1886.
2	Adams, E. O.....	June 15, 1885.	26	Hodgeman, Eph.....	April 22, 1886.
3	Acton, Charles.....	May 24, 1883.	27	Hambser, Frederick....	" 19, 1883.
			28	Hunt, James F.....	Aug. 20, 1885.
			29	Hawkins, Charles.....	Oct. 15, 1885.
			30	Hill, J. W.....	Sept. 15, 1887.
			31	Kallmeyer, C.....	" 10, 1885.
			32	Klinge, William.....	May 15, 1887.
			33	Loescher, Robert.....	Mar. 31, 1885.

Co. H—ROBINSON LIGHT INFANTRY—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Privates—Continued.			Privates—Continued.		
34	LaBoiteaux, L. A.....	Jan. 20, 1883.	48	Quirk, Patrick.....	Dec. 3, 1885.
35	Lenkering, William.....	Mar. 13, 1884.	49	Roberts, Harry E.....	Sept. 13, 1883.
36	Levi, Edward.....	May 29, 1887.	50	Reinhardt, F. R.....	May 23, 1885.
37	Love, William J.....	June 15, 1885.	51	Richards, Harry S.....	Aug. 8, 1885.
38	Lowes, Hervey.....	Apr. 22, 1886.	52	Sanders, Siegle.....	June 3, 1886.
39	Longland, John.....	June 11, 1885.	53	Stoddard, S. P.....	Jan. 2, 1885.
40	May, Max.....	April 12, 1883.	54	Smith, D.....	May 23, 1885.
41	Meyers, John.....	June 15, 1885.	55	Temmen, Frank.....	June 15, 1885.
42	McIlvaine, Harry C.....	" 19, 1885.	56	Taylor, William J.....	Sept. 13, 1883.
43	Nimmo, Henry.....	Nov. 3, 1885.	57	Trauth, Joseph.....	Jan. 21, 1886.
44	Ogden, Thomas.....	Jan. 12, 1885.	58	Van, Daniel.....	" 12, 1885.
45	Otis, William.....	Aug. 5, 1886.	59	Vearil, William.....	Mar. 10, 1884.
46	Peet, Charles D.....	June 24, 1885.	60	Weatherly, Joseph.....	Nov. 14, 1886.
47	Purcell, Edward.....	" 28, 1883.			

Strength of Company, 72.

Co. I—LINCOLN GUARD, CINCINNATI—Organized March 24, 1879.

OFFICERS.

John Foellger.....Captain.
Edward H. Lovell.....1st Lieutenant.
Fred. F. Hoffman.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Sergeants.			Privates—Continued.		
1	Edward Muthert.....	Jan. 18, 1884.	5	Byrune, O. M.....	June 3, 1887.
2	H. Vennemaun.....	Nov. 1, 1885.	6	Connelly, Harry.....	Feb. 8, 1885.
3	Louis Detert.....	Apr. 6, 1883.	7	Coffinan, James.....	Nov. 14, 1887.
4	H. Steckel.....	" 6, 1883.	8	Cole, George C.....	Mar. 23, 1885.
5	William Von Stein.....	July 25, 1884.	9	Dooley, Joseph.....	June 8, 1885.
Corporals.			10	Dreiling, Reuben.....	Sept. 1, 1885.
			11	Dobson, Alfred.....	June 26, 1886.
			12	Davis, Thomas.....	Apr. 20, 1887.
1	F. C. Walker.....	June 11, 1884.	13	Frick, C. W.....	May 9, 1884.
2	Harry Morris.....	May 9, 1884.	14	Edwards, W. M.....	Nov. 14, 1887.
3	H. Rohrkasse.....	July 19, 1884.	15	Kobeahn, J.....	Apr. 29, 1885.
4	F. Schlerp.....	Apr. 9, 1884.	16	Latchford J.....	June 26, 1886.
5	John Meyer.....	May 9, 1884.	17	Mayer, Benjamin.....	Mar. 9, 1885.
6	.....	.....	18	Marianthal, Theodore..	May 26, 1885.
7	.....	.....	19	Maher, William.....	June 26, 1886.
8	.....	.....	20	McLaughlin, M.....	" 26, 1886.
			21	McHugh, William.....	" 26, 1886.
			22	Mueller, William.....	Jan. 18, 1884.
			23	Morgan, Harry.....	Apr. 7, 1887.
			24	Newman, Otto.....	Mar. 25, 1886.
1	Theo. Wetterstroene....	May 23, 1885.	25	Nichols, William.....	Apr. 6, 1887.
2	Anton Foellger.....	" 11, 1884.	26	Rose, Herman.....	Jan. 1, 1887.
Wagoner.			27	Roth, Louis.....	Feb. 29, 1883.
1	.....	.....	28	Rankle, R.....	June 10, 1886.
			29	Symmes, James.....	July 25, 1884.
			30	Schwab, William F....	June 19, 1884.
			31	Utz, William.....	Feb. 1, 1884.
			32	Willmott, James.....	Aug. 26, 1884.
			33	Walker, E. J.....	Mar. 23, 1885.
			34	Wiethe, Henry.....	" 24, 1887.
			35	Zuber, John.....	May 23, 1885.
1	Brandenburg, August..	Apr. 6, 1885.			
2	Baker, Otto L.....	June 10, 1885.			
3	Brannon, J. O.....	Feb. 3, 1887.			
4	Beebe, J. R.....	Apr. 7, 1887.			

Strength of Company, 50.

SECOND REGIMENT OF INFANTRY.

FIELD AND STAFF OFFICERS.

James C. Howe	Colonel.
Alfred B. Probert.....	Lieut.-Colonel.
Hiram F. Collins.....	Major.
Byron M. Clen Dening.....	Major.
Pearl C. Campbell	Adjutant.
Fremont Lowry.....	Quartermaster.
Alva L. Paul	Surgeon.
S. G. Glenn	Asst. Surgeon.
John. A. Bower	Chaplain.

Non-Commissioned Staff and Band, with Dates of Enlistment.

No.	Name and Rank.	Date of en- listment.	No.	Name and Rank.	Date of en- listment.
	<i>Sergeant-Major.</i>			<i>Musicians.</i>	
1	.....		1	Crooks, W. W	May 14, 1887.
	<i>Quartermaster-Sergeant.</i>		2	Gilbert, W. T.....	"
1	Louis J. Fleck.....	Apr. 27, 1886.	3	Harmony, A. S.....	"
	<i>Commissary-Sergeant.</i>		4	Harmony, C. W	"
1	David Rison.....	Aug. 1, 1883.	5	King, I. E.	"
	<i>Hospital Steward.</i>		6	Lautenschlager, Henry	"
1	William Tschanen	Aug. 1, 1883.	7	Lutz, Adam	Aug. 7, 1884.
	<i>Principal Musicians.</i>		8	McArthur, Joseph B ..	May 14, 1887.
1	Edward Strather	Aug. 1, 1883.	9	Meyer, J. G.....	"
2	.....		10	McKinley, W. S.....	"
	<i>Drum Major.</i>		11	Park, W. R.....	"
1	Wm. Weisenback	Aug. 8, 1887.	12	Rice, A. N.....	"
	<i>Leader.</i>		13	Ream, E. A.....	"
1	John C. Smith.....	Aug. 7, 1884.	14	Schindewolf, J. H	Aug. 8, 1887.
			15	Seitz, John W.....	"
			16	Southard, Chester F....	"
			17	Sprinker, John	"
			18	Weatherhead, Chas. D..	"
			19	Williams, E. V	"
			20	Williams, Grool H	May 14, 1887.
			21	Wilkin, J. A	Aug. 8, 1887.
			22	Young, D. S.....	May 14, 1887.
			23	Zenders, Anthony	Aug. 7, 1884.
			24	Zoan, A. G	"

Strength of Field, Staff and Band 39.

CO. A—FINDLAY LIGHT GUARD, FINDLAY—Organized December 10, 1874.

OFFICERS.

Charles L. Davis.....Captain.
Gideon Radabaugh.....1st Lieutenant.
Melville Keltner2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Sergeants.			Privates—Continued.		
1	Edward K. Taylor.....	Sept. 8, 1883.	5	Coulter, George.....	Mar. 3, 1886.
2	Edward P. Barnes.....	Mar. 4, 1885.	6	Dunn, John A.....	May 8, 1886.
3	Charles Workman	Aug. 22, 1883.	7	Dye, James B	June 13, 1887.
4	Harry T. Monroe.....	June 12, 1883.	8	Debrant, Samuel	Feb. 17, 1886.
5	Amos E. Powell.....	June 19, 1883.	9	Dietrick, Joseph.....	Mar. 10, 1886.
Corporals.			10	Elms, Frank C	Mar. 3, 1886.
			11	Flack, Elmer	"
			12	Felson, Daniel J.....	July 9, 1887.
1	Henry C. Cobb	Mar. 3, 1886.	13	Grove, J. I	July 20, 1887.
2	James C. Belden	"	14	Hartzell, Edward.....	Feb. 4, 1885.
3	Robert Debrant.....	June 22, 1885.	15	Hang, George M	June 13, 1887.
4	Edward Flack.....	"	16	Hawkins, W. S.....	"
5	.....	.....	17	Hassler, John F.....	Mar. 3, 1887.
6	.....	.....	18	Knise, Jacob	Feb. 17, 1886.
7	.....	.....	19	King, Rush L	Mar. 3, 1886.
8	.....	.....	20	Kehres, Theodore	July 9, 1887.
Musicians.			21	Marvin, Oscar	Feb. 17, 1886.
1	Thomas Lightfoot.....	Dec. 27, 1884.	22	Marvin, Ernst.....	July 18, 1886.
2	Charles Cameron	July 20, 1887.	23	O'Hara, Thomas J.....	July 8, 1886.
Wagoner.			24	Opperman, Walter	June 13, 1887.
1	.....	.....	25	Perry, Lewis	Aug. 23, 1883.
Privates.			26	Sheets, David.....	Feb. 18, 1885.
			27	Sheets, William	"
			28	Shaffer, Clemer M.....	Mar. 3, 1886.
			29	Van Tine, Charles.....	July 13, 1887.
			30	Vance, Cloyce W	"
			31	Weil, Philip.....	Aug. 9, 1886.
1	Alban, W. H	Mar. 10, 1886.	32	Weity, C. M	June 30, 1886.
2	Brickman, Frank	Dec. 27, 1884.	33	Washington, Joseph ...	Aug. 10, 1886.
3	Burk, Calvin	Feb. 17, 1886.	34	Wilkins, Marion	July 9, 1887.
4	Crites, C. E	Dec. 27, 1884.	35	Whittier, Harry.....	Mar. 3, 1886.

Strength of Company, 49.

CO. B—KIRBY LIGHT GUARD—UPPER SANDUSKY—Organized January 7, 1875.

OFFICERS.

.....Captain.
.....1st Lieutenant.
William B. Hitchcock, Jr.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Sergeants.			Sergeants—Continued.		
1	Chas. Liebenthal	June 14, 1882.	4	Isaac A. Smalley ...	Feb. 20, 1883.
2	George H. Scheck	Feb. 20, 1880.	5	Chas. W. Kramer.....	Feb. 20, 1882.
3	.....	.....	

Co. B—KIRBY LIGHT GUARD—UPPER SANDUSKY—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
	<i>Corporals.</i>			<i>Privates--Continued.</i>	
1	.....	.....	3	Boyles, James	Aug. 1, 1887.
2	.....	.....	4	Brown, Oscar.....	Aug. 10, 1886.
3	U. G. Coutts.....	Sept. 11, 1883.	5	Demarest, Raymond ..	Feb. 23, 1885.
4	Robert E. McKelvy....	Aug. 22, 1883.	6	Dennis, Frank.....	Feb. 7, 1887.
5	.....	.....	7	Fagan, Henry.....	June 23, 1886.
6	.....	.....	8	Fisk, John	"
7	.....	.....	9	Gibson, Virgil H.....	Aug. 1, 1887.
8	.....	.....	10	Gloeser, Joseph.....	Jan. 17, 1885.
	<i>Musicians.</i>		11	Hale, Harry D.....	Jan. 24, 1887.
1	Frank Tschanen.....	June 14, 1882.	12	Irvin, Harry.....	Aug. 1, 1887.
2	William Orsinger.....	June 17, 1885.	13	Kirschner, Chas	Aug. 20, 1883.
	<i>Wagoner.</i>		14	Lime, Hudson.....	Feb. 23, 1885.
1	.....	.....	15	Miller, Edward.....	Aug. 22, 1883.
	<i>Privates.</i>		16	McGinnis, Frank... ..	Dec. 19, 1883.
1	Applegate, Frank	Feb. 28, 1887.	17	Nidig, Joseph H.....	Feb. 23, 1885.
2	Bentges, John.....	June 10, 1885.	18	Pryor, Frank.....	Mar. 29, 1886.
			19	Quine, Marion.....	July 9, 1886.
			20	Rea, William.....	Jan. 31, 1887.
			21	Schilling, Henry	Apr. 28, 1884.
			22	Shealy, Frank.....	Mar. 24, 1884.
			23	Schewell, Henry	Mar. 16, 1886.
			24	Widman, Jay.....	May 11, 1885.

Strength of Company, 32.

Co. C—MELANCTHON LIGHT GUARD—LIMA—Organized January 14, 1875.

OFFICERS.

Frank M. Bell.....Captain.
Oscar L. Mowen.....1st Lieutenant.
William S. Johnson.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
	<i>Sergeants.</i>			<i>Musicians.</i>	
1	John H. Hoover.....	Sept. 3, 1885.	1	.....	.....
2	John H. Bailey.....	June 26, 1886.	2	.....	.....
3	Harry C. Bell.....	"			
4	.....	.....		<i>Wagoners.</i>	
5	.....	.....	2	Andrew Brooks.....	May 1, 1884.
	<i>Corporals.</i>			<i>Privates.</i>	
1	B. H. H. Hoover	June 26, 1886.	1	Armstrong, Thomas B.	May 26, 1886.
2	George Harper	June 7, 1883.	2	Ashton, Arlie	July 24, 1884.
3	Adolph Bower.....	June 26, 1886.	3	Boone, Frank A.....	July 28, 1885.
4	B. C. Faurot, Jr	Apr. 17, 1884.	4	Carter, Frank.....	Sept. 3, 1885.
5	Charles Cobean.....	July 28, 1884.	5	Catt, Asa A.....	May 26, 1886.
6	.....	.....	6	Crum, Fred A.....	June 20, 1885.
7	.....	.....	
8	.....	.....	

Co. C—MELANCTHON LIGHT GUARD—LIMA—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Privates—Continued.</i>			<i>Privates—Continued.</i>		
7	Dugray, Edward	June 5, 1885.	20	McComb, Chas	April 6, 1883.
8	Dugray, Wm H	April 1, 1887.	21	Peter McCown.....	May 1, 1884.
9	Eyster, Clement.....	July 24, 1884.	22	Morris, Arthur.....	May 17, 1884.
10	Frazier, Elmer E.....	June 20, 1885.	23	Morris, Wm A.....	"
11	Gibbs, Wm P.....	May 26, 1886.	24	Orchard, W. E.....	July 12, 1887.
12	Hull, B. L.....	July 12, 1887.	25	Pangle, Wm.....	May 26, 1886.
13	Hiner, Ed. W	"	26	Partello, Frank C.....	Mar. 11, 1886.
14	Hutchins, H. L.....	Mar. 11, 1886.	27	Rolston, John E.....	April 1, 1887.
15	Jones, John	April 1, 1887.	28	Rowland, John Wm.....	July 31, 1884.
16	Johns, Geo	Nov. 14, 1885.	29	Richmond, Clinton.....	June 30, 1884.
17	Johns, Silas H.....	Sept. 26, 1885.	30	Smith, Frank J	Apr. 24, 1884.
18	Jones, Wm. H.....	Apr. 17, 1884.	31	Steven, Louis	May 1, 1884.
19	Moyer, Joe G	July 12, 1887.	32	Shroyer, Milton	Aug. 30, 1883.
			33	Snook, Wm	June 13, 1884.

Strength of Company, 45.

Co. D—GILLILAND GUARD, VAN WERT—Organized May 18, 1875.

OFFICERS.

John RisonCaptain.
Nathan I. Danner1st Lieutenant.
Tom M. Smith.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Sergeants.</i>			<i>Privates—Continued.</i>		
1	William S. Bechtol.....	June 16, 1883.	4	Cheesman, Frank	Aug. 3, 1886.
2	Edward Conn	Mar. 31, 1884.	5	Camp, Winfield S	May 25, 1886.
3	Joseph Scott.....	Apr. 12, 1887.	6	Crooks, Robert L.....	Sept. 13, 1887.
4	Leonard Armentrout..	July 13, 1886.	7	Fox, Perry	Apr. 12, 1887.
5	David C. Rison, Jr.....	Mar. 31, 1884.	8	Gamble, Omar.....	Apr. 13, 1886.
<i>Corporals.</i>			9	Gamble, Emmett E.....	Apr. 12, 1887.
1	Albert Kiehl.....	June 16, 1883.	10	Hinton, Elias.....	June 16, 1883.
2	George F. Lambkin	June 9, 1885.	11	Hertz, John F.....	July 8, 1887.
3	Walter Gleason.....	Apr. 12, 1887.	12	Kutsch, John J.....	June 9, 1885.
4	George W. Spahr.....	July 25, 1884.	13	Linkhart, Kirby.. ..	July 8, 1884.
5	Hulbert H. Hinton	June 16, 1883.	14	Lewis, James.....	July 8, 1887.
6	Henry Stitz.....	Nov. 25, 1884.	15	Lee, Hugh V	"
7	Charles Redrup.....	June 15, 1885.	16	McCleary, John	July 20, 1886.
8	Jacob C. Albright	June 23, 1885.	17	Mathews, Joseph A.....	July 8, 1887.
<i>Musicians.</i>			18	Parker, Elmer	June 19, 1885.
1	.....	.....	19	Rison, William H	June 5, 1885.
2	.....	.....	20	Redrup, George	June 15, 1885.
<i>Wagoner.</i>			21	Raker, Eugene	Apr. 19, 1887.
1	.....	.....	22	Roark, Andrew J.....	July 8, 1887.
<i>Privates.</i>			23	Rise, Eli E	"
1	Athey, James	Apr. 12, 1887.	24	Shurtliff, Hiram.....	July 26, 1884.
2	Balyeat, Curtis	June 26, 1885.	25	Sawvel, Jacob B.....	June 9, 1885.
3	Conn, Elmer E	Mar. 31, 1884.	26	Stitz, Edward C	Apr. 12, 1887.
			27	Severs, John H.....	July 8, 1887.
			28	Snyder, George B	"
			29	Welsh, David L	Aug. 1, 1884.
			30	Welsh, Charles	Nov. 25, 1884.
			31	Watson, George W	June 9, 1885.
			32	Washington, York	Sept. 11, 1883.

Strength of Company, 48.

Co. E—FORBING GUARD, KENTON--Organized June 3, 1884.

OFFICERS.

Simon Price.....Captain.
Edward Lunney1st Lieutenant.
Lewis Wynn2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Sergeants.			Privates—Continued		
1	William Maine.....	June 3, 1884.	5	Burns, Ulysses	July 1, 1886.
2	William Gelhause.....	"	6	Camper, Edward	June 3, 1884.
3	John Miller	"	7	Chamberlain, William..	"
4	Adam Starling	"	8	Ducker, John.....	"
5	Peter Gillespie	"	9	Forbing, Irwin.....	"
Corporals.			10	Herbert, Lewis	"
1	Charley Wilken.....	June 3, 1884.	11	Hurd, James	July 16, 1885.
2	William Model.....	"	12	Kennedy, Meade.....	June 3, 1884.
3	Geo. Hatch	"	13	King, William	July 16, 1885.
4	Frank McAdow ..	"	14	Lang, Charles	June 3, 1884.
5	Frank Heffelfinger.....	"	15	Lease, Fred.....	June 1, 1886.
6	Frank Criswell	"	16	Louis, Elmer.....	July 20, 1886.
7	Harry Druschal	"	17	Melia, Patrick.	June 3, 1884.
8	Cephus Johnson.....	"	18	Murphy, Freeman	"
Musicians.			19	McClaid, William	July 16, 1885.
1	Albert Sormers	June 3, 1884.	20	McClellan, Memford ..	"
2	.....	.....	21	McGlaughlin, Edward..	July 1, 1886.
Wagoner.			22	Phillips, John.....	July 6, 1885.
1	.....	.....	23	Price, Martin.....	June 3, 1884.
Privates.			24	Price, Lewis.....	June 1, 1887.
1	Burnsides, James	June 3, 1884.	25	Pearce, Frank	June 3, 1884.
2	Brown, John	"	26	Risher, Francis.. ..	"
3	Bower, Jacob.....	"	27	Retzler, Charles	"
4	Butler, Samuel.....	July 16, 1885.	28	Russell, Charley.....	"
			29	Rolison, Fred	June 1, 1887.
			30	Schutte, Frank.....	June 3, 1884.
			31	Stetzworth, Ralph.....	July 16, 1885.
			32	Schnaudt, Henry.....	June 3, 1884.
			33	Wells, James.....	July 1, 1886.
			34	Thompson, Richard	June 3, 1884.
			35	Wilkin, Frank	July 1, 1886.

Strength of Company, 52.

Co. G—ROBINSON GUARD, KENTON—Organized November 9, 1877.

Willis E. Scott.....Captain.
Julius A. Knert.....1st Lieutenant.
John B. Born.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Sergeants.			Corporals.		
1	George E. Mitchell.....	June 13, 1885.	1	Henry J. Reeley.....	Jan. 9, 1883.
2	Everett W. Barron.....	" 9, 1883.	2	John Dugan.....	Aug. 8, 1883.
3	William T. Born.....	July 9, 1883.	3	Charles Camper.....	Apr. 10, 1883.
4	I. D. Bolenbaugh.....	Feb. 14, 1883.	4	Jesse Stevenson.....	Aug. 15, 1884.
5	.....	.....	5	Matt Zimmerman.....	Jan. 27, 1883.

Co. G—ROBINSON LIGHT GUARD—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Corporals—Continued.</i>			<i>Privates—Continued.</i>		
6	William J. Ochs.....	Jan. 11, 1884.	11	Fink, Jacob.....	Feb. 2, 1887.
7	Frank Schoonover.....	July 24, 1886.	12	Holmes, Harley S.....	Jan. 29, 1887.
8	.....	.....	13	Harbison, William H..	Aug. 6, 1884.
<i>Musicians.</i>			14	Harbison, Charles.....	Sept. 8, 1883.
1	John Gordon.....	Aug. 6, 1884.	15	Hoge, Hamilton E.....	Apr. 15, 1884.
2	.....	.....	16	Handenschild, J.....	" 9, 1884.
<i>Wagoner.</i>			17	Henderson, William P.	July 20, 1886.
1	David E. Goodin.....	Jan. 24, 1883.	18	James, Samuel A.....	May 31, 1886.
<i>Privates.</i>			19	Lott, Harry.....	June 19, 1885.
1	Aull, John B.....	July 1, 1887.	20	Lautenschlager, C.....	May 5, 1886.
2	Brick, Samuel H.	" 22, 1885.	21	Munson, Leroy D.....	Jan. 29, 1883.
3	Carr, Scott.....	" 19, 1883.	22	Parrott, John M.....	Feb. 2, 1887.
4	Cale, William C.....	Jan. 19, 1883.	23	Reed, Charles L.....	July 14, 1886.
5	Copeland, Elwood.....	Dec. 16, 1885.	24	Roth, William A.....	Aug. 15, 1884.
6	Corken, Charles.....	Aug. 6, 1884.	25	Russell, Charles W.....	Feb. 2, 1887.
7	Crane, George E.....	May 6, 1886.	26	Sutermester, H.....	Aug. 6, 1884.
8	Edsell, Harry.....	Aug. 2, 1886.	27	Senning, Martin.....	" 2, 1886.
9	Fullerton, Charles.....	" 4, 1884.	28	Scott, George W.....	May 14, 1884.
10	Farmer, Charles.....	May 18, 1887.	29	Tarr, William.....	July 1, 1887.
			30	Van Riper, George.....	Feb. 2, 1887.
			31	Wilmoth, William.....	May 30, 1884.
			32	Wilmoth, Eugene.....	" 6, 1884.
			33	Wilson, Willis H.....	April 27, 1887.
			34	Zingg, George.....	June 27, 1884.

Strength of Company, 50.

Co. H—BLOOMDALE RIFLES, BLOOMDALE—Organized May 7, 1885.

Edward S. Bryant.....Captain.
William W. Emerson.....1st Lieutenant.
John J. Ullery.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Sergeants.</i>			<i>Wagoner.</i>		
1	Rufus A. Emerson.....	May 7, 1885.	1	.....	.....
2	Joseph S. Enos.....	"	<i>Privates.</i>		
3	Jacob B. Fry.....	"	1	Beam, James A.....	May 7, 1885.
4	Jerry Loman.....	"	2	Bryant, Charles H.....	"
5	.....	.....	3	Bryant, Warren C.....	"
<i>Corporals.</i>			4	Baldwin, John D.....	"
1	William Miller.....	Mar. 15, 1886.	5	Baird, William S.....	"
2	Samuel A. Linhart.....	May 7, 1885.	6	Bronson, Parlee.....	Mar. 15, 1886.
3	Charles Overholts.....	"	7	Bristol, Tom C.....	" 30, 1887.
4	James W. Smith.....	"	8	Crawford, Grant.....	Aug. 11, 1886.
5	Joseph R. Cramer.....	"	9	Calahan, Thomas.....	Nov. 13, 1886.
6	Charles G. Bronson.....	"	10	Cramer, David L.....	May 7, 1885.
7	Joseph H. Strawbridge	"	11	Davis, S.....	"
8	John P. Beam.....	"	12	Davis, James N.....	"
<i>Musicians.</i>			13	Davis, Edward H.....	July 1, 1887.
1	Merton A. Probert.....	May 7, 1885.	14	Elliott, Marshall A.....	May 7, 1885.
2	Don G. Baird.....	July 1, 1887.	15	Frankfather, Oran B...	Apr. 10, 1886.
			16	Hosler, Henry M... ..	May 7, 1885.
			17	Koeiger, Henry M.....	"

Co. H—BLOOMDALE RIFLES—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Privates—Continued.</i>			<i>Privates—Continued.</i>		
18	Loman, Jackson	May 7, 1885.	35	Simon, Harry H.....	Feb. 2, 1886.
19	Linhart, Joseph F.....	"	36	Simon, John H.....	May 7, 1885.
20	Mason, James W	"	37	Sadler, William E.....	"
21	McKee, Harry H.....	"	38	Stilwell, Edward S.....	"
22	McKee, Robert A.....	"	39	Shelt, Henry... ..	"
23	Myers, Jonathan E.	"	40	Shirk, Charles B... ..	"
24	Myers, Hiram.....	Oct. 4, 1887.	41	Swineller, John.....	Nov. 13, 1886.
25	Perrine, Frank.....	Feb. 24, 1887.	42	Sheets, Oscar J	May 7, 1885.
26	Robbins, Leander V...	May 7, 1885.	43	Slaughterback, Wm....	"
27	Robbins, Olan O.....	"	44	Urie, George W.....	"
28	Rice, George E.....	"	45	Wineland, John E.....	"
29	Richard, Wilson	"	46	Wineland, William.....	"
30	Simon, Charles F.....	"	47	Wineland, Frank.....	"
31	Shafer, Charles S.....	"	48	Wineland, Emer.....	"
32	Simon, Moses W.....	"	49	Wineland, Jacob.....	Feb. 2, 1886.
33	Simon, Dilton.....	"	50	Wineland, Charles L...	" 18, 1887.
34	Simon, Willis.....	"	51	Wilson, Robert C.....	June 22, 1887.

Strength of Company, 67.

Co. I—RICE GUARD—OTTAWA—Organized May 8, 1884.

OFFICERS.

Hugh E. McClureCaptain.
David C. Long1st Lieutenant.
John J. Rampe.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Sergeants.</i>			<i>Privates.</i>		
1	Walter Fandree.....	May 8, 1884.	1	Bogardus, George	May 8, 1884.
2	Lewis W. Day.....	"	2	Bodfield, William.....	"
3	Henry Ruple.....	"	3	Bugle, John H.....	Aug. 25, 1885.
4	Legrand B. Youtz.....	"	4	Bradfield, Silas B.....	Aug. 12, 1886.
5	.....	.....	5	Carr, Charles	May 8, 1884.
<i>Corporals.</i>			6	Cartwright, Owen T....	Dec. 20, 1886.
1	Mathias Fuerst.....	May 8, 1884.	7	Carr, Clinton.....	May 6, 1887.
2	James Bermingham.....	"	8	Day, Edgar W.....	Mar. 27, 1884.
3	Calvin Taylor	"	9	Day, Amos	Mar. 8, 1884.
4	Antony T. Fox.....	"	10	Davis, John T.....	"
5	William Hefflemire.....	"	11	Douglas, Albert M	Feb. 3, 1885.
6	Joseph Duepker.....	"	12	Dorward, J. Oscar.....	July 15, 1886.
7	Benjamin F. Deniston.	Mar. 7, 1887.	13	Evans, Newton.....	Apr. 13, 1885.
8	.....	.....	14	Ellis, Print. L.....	May 8, 1884.
<i>Musicians.</i>			15	Ewing, Matt.....	Mar. 21, 1887.
1	Isaac Schetser.....	May 8, 1884.	16	Fitch, Philip S.....	May 6, 1884.
2	John Rueve.....	"	17	Fulton, David.....	Jan. 17, 1884.
<i>Wagoner.</i>			18	Frayor, Charles.....	June 3, 1885.
1	.....	.....	19	Grise, August	May 8, 1884.
			20	Godfrey, Frank S., Jr...	"
			21	Justice, Thomas P.....	July 8, 1887.
			22	Kaple, Joseph.....	May 8, 1884.
			23	Kitchen, J. Sherman...	Aug. 2, 1886.
			24	Kroft, John	May 8, 1884.
			25	Long, Charles L. H....	July 26, 1886.

Co. I—RICE GUARD—OTTAWA—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Privates—Continued.</i>			<i>Privates—Continued.</i>		
26	Layton, Robert E	Mar 21, 1887.	37	Straman, Benard.....	Aug. 11, 1885.
27	Malone, Charles S.....	April 9, 1887.	38	Schuerbaum, Joseph...	Sept. 10, 1885.
28	Maltino, James.....	Aug. 11, 1884.	39	Taylor, Fred. H.....	July 26, 1886.
29	Naber, Joseph.....	May 8, 1884.	40	Thame, Frank	May 8, 1884.
30	O'Boyle, William.....	"	41	Thame, Joseph.....	Mar. 30, 1885.
31	O'Marry, James.....	"	42	Trovinger, Frank	May 8, 1884.
32	Place, Orvil T.....	Jan. 17, 1887.	43	Truce, Frank E.....	Jan. 17, 1887.
33	Richmond, James.....	May 4, 1885.	44	Wannamacher, Joseph.	Aug. 12, 1886.
34	Radabaugh, Ellsworth..	May 8, 1884.	45	Wooddell, Milton	June 9, 1885.
35	Suder, Frank.....	"	46	Young, John F. H.....	Dec. 20, 1886.
36	Seifer, Henry.....	Mar. 30, 1885.			

Strength of Company, 62.

Co. K—THE GODFREY LIGHT GUARD—CELINA—Organized June 4, 1884.

OFFICERS.

Wm. H. Dickman, JrCaptain.
C. S. Johnson1st Lieutenant.
Tillman Bidlack 2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Sergeants.</i>			<i>Privates.</i>		
1	John P. Younger.....	June 4, 1884.	1	Adams, Albert	June 14, 1884.
2	John Stalder	"	2	Bishop, Elmer	Jan. 6, 1885.
3	James Craig.....	"	3	Behyner, Charles.....	June 4, 1884.
4	John W. Garnier.....	"	4	Brandon, George.....	May 5, 1885.
5	Jacob Weber	"	5	Bryson, Ed.....	Aug. 31, 1887.
<i>Corporals.</i>			6	Cribbley, Fred	Jan. 6, 1885.
			7	Doe, Fred:.....	June 4, 1884.
			8	Hardin, Eva	Mar. 9, 1887.
1	George Lyons	June 4, 1884.	9	Hiles, Adam.....	June 4, 1884.
2	Shell M. Fisher.....	"	10	Gebele, Leonard.....	Dec. 28, 1886.
3	Charles Stillson.....	"	11	Kooken, Jesse A.....	June 4, 1884.
4	Thomas Kerns	"	12	King, J. A.....	Aug. 5, 1886.
5	John Beauchamp.....	May 19, 1885.	13	Lyons, James	Sept. 1, 1886.
6	Willis Weaver	June 4, 1884.	14	Lyons, John.....	Sept. 30, 1887.
7	Elias Stafford.....	Jan. 6, 1885.	15	Lehman, William.....	June 4, 1884.
8	Joseph Walters... ..	June 4, 1884.	16	Lehman, James	"
<i>Musicians.</i>			17	Long, Frank	Aug. 31, 1887.
			18	Lacy, William	Jan. 6, 1885.
			19	Landfair, Robert.....	Feb. 22, 1887.
1	Peter Haas	June 4, 1884	20	McGee, Will.....	Feb. 26, 1886.
2	Frank Murphy.....	"	21	Murlin, Clarence.....	May 19, 1885.
<i>Wagoner.</i>			22	Schell, John.....	Jan. 6, 1885.
			23	Tavener, Albert.....	June 4, 1884.
			24	Tartellert, Thomas.....	"
			25	Touvelle, Charles S.....	Jan. 5, 1887.
1	Ben. H. Stoker	June 4, 1884.	26	Wolf, Fred.....	June 4, 1884.
			27	Weist, Will.....	"

Strength of Company, 46.

THIRD REGIMENT OF INFANTRY.

FIELD AND STAFF OFFICERS.

William M. Williamson.....Colonel.
James E. Shellenberger.....Lieut.-Colonel.
Peter B. Rensch.....Major.
Harry H. Williams.....Major.
William H. Gross.....Adjutant.
Charles C. Shuman.....Quartermaster.
John A. Sterrett ... Surgeon.
William L. Templeton.....Asst. Surgeon.
Heber A. Ketcham..... Chaplain.

Non-Commissioned Staff and Band, with Dates of Enlistment.

No.	Name and Rank.	Date of en- listment.	No.	Name and Rank.	Date of en- listment.
	<i>Sergeant-Major.</i>			<i>Leader.</i>	
1	Harvey Medlum	July 31, 1885.	1	.....	.....
	<i>Quartermaster-Sergeant.</i>			<i>Musicians.</i>	
1	.....	.....	1	Alfle, Lawrence	May 5, 1887.
	<i>Commissary-Sergeant.</i>		2	Barber, George L.....	"
1	Henry I. Weaver.....	July 31, 1885.	3	Cleckner, George F.....	"
	<i>Hospital Steward.</i>		4	Furnas, Horace G	June 10, 1887.
1	Morris H. Miller	July 30, 1883.	5	Hayes, H. C.....	May 5, 1887.
	<i>Principal Musicians.</i>		6	Harmony, W. P.....	"
1	Henry Klute	May 5, 1887.	7	Heinemann, Adam.....	"
2	John M. Gier.....	Apr. 28, 1884.	8	Horr, Frazer.....	"
	<i>Drum Major.</i>		9	Kah, Edward E.....	"
1	George Dress	June 29, 1886.	10	Kogle, Charley	June 1, 1887.
			11	Lefever, William B	May 5, 1887.
			12	Morz, Charles	June 1, 1887.
			13	Rebstock, John A	May 5, 1887.
			14	Root, Luther W.....	"
			15	Shuman, J. Frank	July 2, 1883.
			16	Sherer, August.....	May 5, 1887.
			17	Strouse, William B.....	June 7, 1887.
			18	Thompson, Edward H.	Aug. 5, 1886.
			19	Taylor, Willis B.....	May 5, 1887.
			20	Van De Griff, William.	Aug. 16, 1887.
			21	White, Charles E.....	May 5, 1887.
			22	Wilson, Earle B.....	June 1, 1887.
			23	Warstner, Joseph B....	May 5, 1887.

Strength of Field, Staff and Band, 38.

Co. A—COVINGTON GUARD, COVINGTON—Organized July 8, 1873.

OFFICERS.

William A. Carson.....Captain.
James D. Rike.....1st Lieutenant.
James R. Clarke.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Sergeants.			Privates—Continued.		
1	William H. Perry.....	July 26, 1884.	6	Cox, Elmer L	June 26, 1884.
2	William J. Addington..	June 26, 1886.	7	Dimick, Joseph.....	July 14, 1886.
3	Johnson L. Smith.....	Aug. 11, 1886.	8	Finfrock, Henry	May 29, 1886.
4	Lewis Ingle	Aug. 25, 1883.	9	Gorrel, William	Feb. 28, 1885.
5	Leonard S. Duncan....	Aug. 18, 1883.	10	Gorrel, Daniel.....	May 30, 1885.
Corporals.			11	Hart, James E	June 26, 1886.
1	Andrew J. Hart	Mar. 30, 1884.	12	Hartle, Albert.....	" 23, 1886.
2	George W. Hollopeter..	Aug. 9, 1883.	13	Honeyman, Ira F	Mar. 29, 1884.
3	Stephen A. Thornton...	June 28, 1885.	14	Huffman, Levi	July 13, 1887.
4	Harry D. Aldrich.....	July 25, 1885.	15	Ibaugh, Charles	June 13, 1885.
5	Charles E. Goens.....	Dec. 12, 1885.	16	Jones, Davis W	June 26, 1886.
6	.....	.....	17	Kessler, Aaron H	July 30, 1887.
7	.....	.....	18	Langston, Geo. F.....	Feb. 27, 1886.
8	.....	.....	19	Layer, George.....	June 23, 1886.
Musicians.			20	Lindsay, George	April 17, 1886.
1	.....	.....	21	Marker, Franklin	July 14, 1886.
2	.....	.....	22	Martin, Jacob W	Aug. 11, 1886.
Wagoner.			23	Nicodemus, James	June 19, 1886.
1	James Smith	Aug. 8, 1884.	24	Pierce, John T	June 13, 1885.
Privates.			25	Reinnier, William P ...	Aug. 1, 1884.
1	Brown, Harry E.....	June 26, 1886.	26	Smith, Charles	Aug. 18, 1883.
2	Byrket, John A	Jan. 1, 1886.	27	Smith, Frederick	May 29, 1886.
3	Chase, Charles R	Aug. 16, 1887.	28	Stahl, Samuel H	June 2, 1886.
4	Clingan, Korah E.....	June 19, 1886.	29	Stricker, Grant.....	April 17, 1886.
5	Coats, Harvey	" 17, 1885.	30	Teach, Charles H.....	July 28, 1883.
			31	Tucker, John W.....	June 17, 1885.
			32	Wagner, Lawrence.....	June 13, 1885.
			33	Weedman, Phil	July 7, 1886.
			34	Westfall, William E...	July 25, 1885.
			35	Wombold, Charles	June 26, 1886.
			36	Worley, Robert J	July 26, 1884.

Strength of Company, 50.

Co. B—URBANA GUARD, URBANA—Organized February 4, 1876.

OFFICERS.

William H. Eccles.....Captain.
Charles O. Taylor.....1st Lieutenant.
Oscar S. Robinson.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Sergeants.			Corporals.		
1	Edwin M. Johrans.....	Aug. 3, 1883.	1	Van B. Shellhorne.....	Mar. 11, 1886.
2	George Mayse, Jr.....	April 4, 1884.	2	Frank C. Irvine.....	June 30, 1886.
3	Elmore E. Alexander..	May 29, 1885.	3	Edward J. Hamilton...	May 20, 1886.
4	William Berton.....	Aug. 14, 1883.	4	.....	.....
5	.....	.....	5	.....	.....

Co. B—URBANA GUARD—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Corporals—Continued.			Privates—Continued.		
6	.....	.....	12	Deming, George R.....	Dec. 28, 1883.
7	.....	.....	13	Dowell, Wilson T.....	July 7, 1887.
8	.....	.....	14	Fay, James O.....	July 22, 1886.
Musicians.			15	Greenlie, Harvey T.....	June 18, 1884.
1	Levi Shyrigh.....	June 26, 1886.	16	Good, Andrew J.....	July 22, 1886.
2	.....	.....	17	Graham, George H	July 7, 1887.
Wagoner.			18	Hill, Charles E.....	June 27, 1884.
1	Charles D. Robinson...	July 18, 1884.	19	Kenton, Oliver C.....	Feb. 16, 1883.
Privates.			20	Kiser, Cherubim H....	July 18, 1884.
1	Akers, Nathan H.....	June 26, 1883.	21	Knotts, Edward.....	July 14, 1887.
2	Andrews, James H.....	June 17, 1886.	22	Larrimore, Thomas J...	Mar. 16, 1886.
3	Andrews, Frank.....	July 15, 1886.	23	Larrimore, George.....	July 14, 1887.
4	Bates, Samuel J. C.....	Dec. 28, 1883.	24	Merritt, William.....	May 23, 1885.
5	Bowser, William.....	Sept. 1, 1887.	25	McClintock, John D....	May 25, 1883.
6	Cox, Thomas H.....	July 31, 1885.	26	McGree, William.....	July 31, 1883.
7	Cox, George E.....	May 7, 1885.	27	McDargh, George.....	May 12, 1887.
8	Carey, Joseph M.....	May 7, 1886.	28	O'Roarke, Valerie E....	July 20, 1886.
9	Castle Frank G.....	May 20, 1886.	29	Phillips, Jesse E.....	April 29, 1886.
10	Cretcher, Benjamin W.	June 29, 1886.	30	Phillips, Charles.....	June 17, 1886.
11	Crosswhite, Harry.....	Aug. 22, 1887.	31	Shatto, Alexander.....	July 15, 1886.
			32	Shatto, Melvin.....	July 7, 1887.
			33	Taylor, Pearl.....	July 7, 1887.
			34	Thompson, William F..	July 14, 1887.
			35	Wilson, Ernest L.....	Nov. 30, 1883.
			36	White, Ernest.....	July 22, 1886.

Strength of Company, 48.

Co. C—HALL GUARD, GREENVILLE—Organized April 12, 1881.

OFFICERS.

Lewis C. Garver.....Captain.
William H. Webb.....1st Lieutenant.
William H. Dunker.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of en- listment.	No.	Name and Rank.	Date of en- listment.
<i>Sergeants.</i>			<i>Musicians.</i>		
1	Charles Balser.....	May 3, 1886.	1	Leonard M. Garver.....	July 5, 1887.
2	James H. McDonnel...	Mar. 1, 1883.	2	Edward McKeon.....	July 22, 1886.
3	Pleasant Bell	Apr. 30, 1884.	<i>Wagoner.</i>		
4	.....	.....	1	George W. Swisher	June 24, 1886.
5	.....	.....	
<i>Corporals.</i>			<i>Privates.</i>		
1	Squire Dixon.....	Aug. 16, 1883.	1	Albright, Ulysses.....	May 3, 1886.
2	John Feight.....	May 3, 1886.	2	Brandon, John R.....	Aug. 13, 1885.
3	George C. Swope.....	Feb. 11, 1886.	3	Brooks, William H.....	Apr. 23, 1887.
4	.....	.....	4	Balser, George.....	May 30, 1887.
5	.....	.....	5	Beam, Garrie A	June 2, 1887.
6	.....	.....	6	Curtis, Horace D.....	June 17, 1884.
7	.....	.....	7	Cochran, Wm. H.....	June 2, 1887.
8	.....	.....	8	Cole, Elison.....	July 5, 1887.

Co. C—HALL GUARD—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Privates—Continued.</i>			<i>Privates—Continued.</i>		
9	Daugherty, Frank H...	May 20, 1886.	20	Leary, Jacob.....	Aug. 5, 1886.
10	Dangler, Joseph.	June 4, 1887.	21	Murphy, Daniel.....	" "
11	Feirstein, John.....	Mar. 19, 1885.	22	Miller, Wm. R.....	Aug. 16, 1886.
12	Gerard, Edward.....	July 22, 1886.	23	Reeder, Levi C.....	Feb. 19, 1887.
13	Gerard, Charles.....	April 8, 1886.	24	Shaffer, Edward.....	June 9, 1887.
14	Hackett, Frank.....	Mar. 25, 1887.	25	Shaffer, Charles.....	Feb. 19, 1887.
15	Hackett, John.....	May 20, 1886.	26	Sothorn, John T.....	May 8, 1886.
16	Hetzler, Frank.....	June 21, 1886.	27	Smelker, Jefferson.	Apr. 26, 1884.
17	Hunt, Jack	May 6, 1886.	28	Thompson, Wm. B....	June 21, 1886.
18	Jacobs, Toney.....	June 5, 1887.	29	Ulum, Elmer.....	Mar. 11, 1886.
19	Klohe, Joseph.....	June 18, 1885.	30	Witters, George.....	July 26, 1884.

Strength of Company, 42.

Co. D—SIDNEY GUARD, SIDNEY—Organized April 25, 1881.

OFFICERS.

Eli Davis.....Captain.
George W. Bland.....1st Lieutenant.
Elmer M. Honnell2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Sergeants.</i>			<i>Privates—Continued.</i>		
1	Albert Wight	Oct. 1, 1883.	4	Burns, Charles K.....	May 27, 1886.
2	Daniel Fry	Aug. 25, 1886.	5	Bull, Jesse H.....	July 19, 1886.
3	John M. Buckey	Nov. 22, 1882.	6	Boblit, Geo. F.....	" 26, 1886.
4	James M. Carpenter ...	May 27, 1886.	7	Brewer, Frank	Aug. 9, 1886.
5	Edmund O. Gump	" "	8	Brewer, Grant G	Apr. 18, 1887.
<i>Corporals.</i>			9	Brandon, William H...	May 26, 1887.
1	James T. Doran	Oct. 26, 1885.	10	Crumbaugh, Samuel D.	Oct. 26, 1885.
2	Samuel F. Born	Feb. 22, 1886.	11	Carman, Samuel E	Jan. 3, 1887.
3	Elam M. Day.....	May 27, 1886.	12	Elliott, Irwin O	Nov. 24, 1886.
4	Frank W. Johnson ...	Aug. 10, 1885.	13	Freeman, John C.....	Aug. 18, 1885.
5	.....	.....	14	Franks, Edward A	Jan. 3, 1887.
6	.....	.....	15	Good, Albert C.....	June 21, 1886.
7	.....	.....	16	Garrett, George W	July 5, 1886.
8	.....	.....	17	Geer, Frank B.....	" 11, 1887.
<i>Musicians.</i>			18	House, James E.....	June 23, 1884.
1	William A. Staley.....	Oct. 11, 1883.	19	Hume, Geo. W	May 7, 1886.
2	William P. Coast.....	July 11, 1887.	20	Haines, Joseph W.....	June 7, 1886.
<i>Wagoner.</i>			21	Higgins, Charles	Dec. 20, 1886.
1	John Smith	Aug. 9, 1886.	22	Jenkins, Clarence O....	Feb. 21, 1887.
<i>Privates.</i>			23	Marrs, Sherman E.....	July 26, 1886.
1	Aikman, Edward T	Nov. 22, 1882.	24	Maurer Adolph.....	Apr. 18, 1887.
2	Ailes, William U.....	Jan. 15, 1884.	25	Mason, Joseph H.....	May 16, 1887.
3	Beck, James H	Aug. 18, 1885.	26	Mills, John H	May 30, 1887.
			27	O'Donnell, Jerry	July 26, 1886.
			28	Packman, Chas. E.....	June 2, 1886.
			29	Packman, Howard	May 24, 1886.
			30	Pence, Russell.....	Aug. 9, 1886.
			31	Rodgers, Add	May 27, 1886.
			32	Ried, William A ...	July 19, 1886.
			33	Redenbo, Charles O	Aug. 9, 1886.
			34	Stang, Fred	Aug. 10, 1885.

Co. D—SIDNEY GUARD—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Privates—Continued.</i>			<i>Privates—Continued.</i>		
35	Staley, Scott.....	May 4, 1886.	41	Voress, George W.....	July 19, 1886.
36	Stockstill, Jacob W	May 27, 1886.	42	Wirick, George E.....	Oct. 26, 1885.
37	Schaub, Michael B	Aug. 2, 1886.	43	Wren, Edwin H.....	Dec. 20, 1886.
38	Shaw, Edwin.....	May 30, 1887.	44	Wolfe, Ola E	May 31, 1887.
39	Shrader, Daniel M.....	July 4, 1887.	45	Young, Frank E.....	Oct. 26, 1885.
40	Thompson, Isaac	Feb. 26, 1886.	46	Yost, William.....	June 21, 1886.

Strength of Company, 61.

Co. E—TROY GUARD—TROY—Organized April 13, 1880.

OFFICERS.

Joseph B. McCoole.....Captain.
.....1st Lieutenant.
John E. Heller2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Sergeants.</i>			<i>Privates—Continued.</i>		
1	Thomas J. Brown	Mar. 31, 1883.	4	Brown, John A. R.....	Mar. 31, 1883.
2	John W. Shilling.....	Aug. 5, 1885.	5	Brown, John	June 6, 1885.
3	Henry Rettig.....	July 12, 1884.	6	Ballard, Thomas	June 12, 1886.
4	John Dickey	Mar. 31, 1883.	7	Burket, Martin.....	July 16, 1887.
5	Charles A. Hasket.....	May 28, 1886.	8	Cissner, Charles	Aug. 8, 1884.
<i>Corporals.</i>			9	Cecil, Joseph.....	July 12, 1884.
			10	Cochrane, Kyle.....	" 16, 1887.
1	Scott Cromer	May 10, 1884.	11	Cromer, Nathan.....	Mar. 28, 1886.
2	Charles M. McDonald...	June 12, 1885.	12	Etter, Henry	Aug. 7, 1886.
3	Arthur Collins	May 28, 1886.	13	Elliott, Dorsey	Mar. 31, 1883.
4	Daniel Bowman.....	Mar. 31, 1883.	14	Furnas, Ira A. E	May 28, 1886.
5	Silas Westfall	" 27, 1883.	15	Harrison, Samuel T....	July 31, 1886.
6	Daniel Hackett	June 28, 1886.	16	Hart, Alvin	Apr. 18, 1885.
7	Edwin Allen	Apr. 28, 1886.	17	Hartley, Oscar	May 28, 1886.
8	Frank Spitler.....	May 28, 1886.	18	Hendrickson, Wm	"
<i>Musicians.</i>			19	Hershey, Jacob.....	July 12, 1884.
			20	Leffell, Wm.....	" 11, 1885.
1	Charles G. Hyde	July 11, 1885.	21	Leffell, Riley S	Apr. 28, 1886.
2	Perry Shearer	May 28, 1886.	22	McGee, Wm.....	May 28, 1886.
<i>Wagoner.</i>			23	McCandliss, Chas.....	"
			24	Neaves, Harrison.....	July 16, 1887.
1	Grant Shearer	May 28, 1886.	25	O'Diam, Wm.....	May 21, 1886.
<i>Privates.</i>			26	Rice, Edward.....	Dec. 5, 1885.
			27	Sarring, John	Mar. 31, 1883.
1	Allison, Wm. N	July 14, 1883.	28	Siegel, Charles.....	July 16, 1887.
2	Brown, Z. T.....	Aug. 23, 1886.	29	Tice, John F.....	May 28, 1886.
3	Brown, Wm. H.....	June 6, 1885.	30	Turner, Clifford.....	July 31, 1886.
			31	Turner, Cordorus.....	"
			32	Thomas, Eugene	July 16, 1887.
			33	Thomas, Guy S.....	"
			34	Webb, Frank.....	"

Strength of Company, 51.

Co. F—PIQUA LIGHT GUARD—PIQUA—Organized April 10, 1876.

OFFICERS.

Harry H. Hunter.....Captain.
Harry Z. McIntire.....1st Lieutenant.
Henry W. Westfall.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Sergeants.			Privates—Continued.		
1	C. E. Crampton.....	April 14, 1884.	8	Fessler, William	Aug. 2, 1886.
2	J. Walker Davis.....	Mar. 17, 1884.	9	Flanagan, Howard O...	May 30, 1887.
3	Liberty C. Larash.....	May 9, 1887.	10	Gillem, William	April 12, 1886.
4	.....	.....	11	Gillem, A. C	July 11, 1886.
5	.....	.....	12	Good, James	May 7, 1887.
Corporals.			13	Graham, John	July 12, 1887.
1	Albert Clark.....	July 2, 1883.	14	Groh, H. W.....	Oct. 11, 1887.
2	Lewis E. Weldy.....	"	15	Hahn, William.....	Feb. 19, 1883.
3	Walker Wagoner.....	July 2, 1885.	16	Hammond, Edward....	May 14, 1885.
4	Charles Westfall	Jan. 5, 1885.	17	Henry, Geo.....	Feb. 28, 1887.
5	Judson Myers.....	Aug. 17, 1885.	18	Hergenrather, Frank...	May 7, 1887.
6	Geo. Sullenberger	July 25, 1887.	19	Hergenrather, John....	"
7	.....	.....	20	Harrop, Rolla	"
8	.....	.....	21	Harrop, William.....	"
Musicians.			22	Johnston, W. R	Apr. 14, 1884.
1	William Hunt.....	Mar. 28, 1887.	23	Konz, Gust.....	July 29, 1883.
2	.....	.....	24	Konz, Geo. A.....	Jan. 31, 1887.
Wagoner.			25	Lawrence, J. A.....	April 12, 1886.
1	Geo. N. Brush.....	Aug. 4, 1884.	26	Larash, M. J	April 25, 1887.
Privates.			27	Murren, James.....	July 19, 1886.
1	Addington, Finis	Dec. 18, 1882.	28	Murray, Jacob	Aug. 2, 1886.
2	Brading, L. E.....	Oct. 11, 1886.	29	Murray, Geo. M.....	Feb. 22, 1887.
3	Black, J. E	May 7, 1887.	30	Maxwell, C. O.....	Mar. 14, 1887.
4	Crampton, G. B.....	May 9, 1887.	31	Phillips, Harry.....	Aug. 15, 1883.
5	Cox, David	Oct. 29, 1887.	32	Peterson, Wm.....	Aug. 8, 1887.
6	Coffield, E. J	Nov. 7, 1887.	33	Sutton, S. W.....	July 10, 1883.
7	Eyer, P. G	Feb. 23, 1885.	34	Stocker, G. F.....	May 24, 1886.
			35	Stocker, R H.....	May 7, 1887.
			36	Sullenberger, P. H....	June 14, 1886.
			37	Shellenberger, W. H...	Aug. 2, 1886.
			38	Smith, A. R.....	Mar. 14, 1887.
			39	Sillman, C. A.....	April 25, 1887.
			40	Schroeder, Joseph.....	July 12, 1887.
			41	Whitehead, J. E.....	Mar. 24, 1884.
			42	Woodruff, J. W	Aug. 10, 1885.

Strength of Company, 58.

Co. G—GETTYSBURG GUARD—GETTYSBURG—Organized May 8, 1875.

OFFICERS.

Samuel D. Palmer.....Captain.
Harvey F. Dershem.....1st Lieutenant.
.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Sergeants.			Privates—Continued.		
1	John T. Moore	Aug. 1, 1885.	4	Brown, William H.....	April 7, 1883.
2	William Feeser.....	Aug. 31, 1885.	5	Brown, John H	Apr. 2, 1887.
3	.....	.....	6	Brumbaugh, Andrew..	July 1, 1886.
4	Sheridan R. Morrison..	May 30, 1884.	7	Boltin, Victor E.....	Oct. 18, 1887.
5	John Ratchford	April 4, 1885.	8	Crampton, William H..	July 1, 1886.
Corporals.			9	Dunevant, Riley	Apr. 7, 1883.
1	Henry Miller.....	April 7, 1883.	10	Dershem, Clifford L....	June 22, 1887.
2	Jacob D. Langham.....	Mar. 6, 1886.	11	Earnest, Jacob F	July 1, 1886.
3	William A. Seaman....	"	12	Furlong, Hezekiah D...	June 11, 1887.
4	Charles H. Miller.....	Mar. 16, 1885.	13	Hahn, Samuel.....	May 19, 1884.
5	.....	.....	14	Hahn, William.....	Aug. 9, 1886.
6	.....	.....	15	Hershey, Joseph	June 19, 1884.
7	.....	.....	16	Jarvis, Charles W... ..	Mar. 3, 1883.
8	.....	.....	17	Kent, Augustus.....	Aug. 15, 1885.
Musicians.			18	Kocher, Frank	May 8, 1886.
1	Harry M. Dershem.....	Aug. 1, 1885.	19	Kindle, David.....	Aug. 7, 1886.
2	.....	.....	20	Miller, Clement	April 7, 1883.
Wagoner.			21	Miller, Lewis F	Apr. 22, 1886.
1	Henry A. Moore	Aug. 9, 1886.	22	Miller, August	July 28, 1886.
Privates.			23	Midlam, Edwin	Jan. 24, 1885.
1	Burk, James	Aug. 15, 1887.	24	McCune, J. Ira... ..	July 20, 1885.
2	Burk, John.....	April 7, 1883.	25	Penny, Charles A.....	Mar. 7, 1885.
3	Brown, David	May 30, 1884.	26	Roesser, Charles.....	Jan. 6, 1883.
			27	Reck, Ira.....	Oct. 18, 1887.
			28	Reck, Charles E.....	Nov. 5, 1887.
			29	Seaman, William H....	Mar. 23, 1885.
			30	Starr, James O.....	Oct. 18, 1887.
			31	Wellbaum, Sampson...	Mar. 3, 1883.
			32	Yount, Henry L.....	Oct. 18, 1887.
			33	Young, Burr H.....	Apr. 7, 1883.

Strength of Company, 45.

Co. H—LAWRENCE CADETS, BELLEFONTAINE—Organized April 10, 1876.

OFFICERS.

Joseph E. WilkinsonCaptain.
Charles Sherman1st Lieutenant.
William H. Kemper.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Sergeants.			Corporals.		
1	Ernst Rexer.....	Feb. 13, 1884.	1	George Cope.....	June 20, 1883.
2	Lewis Boughton.....	July 17, 1883.	2	William D. Ward..	Aug. 28, 1883.
3	Harry G. Ash.....	June 4, 1884.	3	Charles L. Porter.....	Aug. 9, 1884.
4	William Kautzman.....	May 4, 1884.	4	Herman G. Law.....	Mar. 3, 1886.
5	Carton Wright	April 4, 1883.	5	Norval W. Slicer.....	"

CO. H—LAWRENCE CADETS—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
	<i>Corporals—Continued.</i>			<i>Privates—Continued.</i>	
6	.....	.....	8	Clayson, William.....	Sept. 15, 1886.
7	.....	.....	9	Clingerman, George ...	May 11, 1887.
8	.....	.....	10	Crozier, Samuel A.	June 2, 1886.
	<i>Musicians.</i>		11	Culbertson, Sardis.....	Aug. 29, 1883.
1	James C. Lockhart.....	Feb. 16, 1884.	12	Eaton, Charles S.....	July 7, 1886.
2	John J. Shriver.....	May 18, 1886.	13	Eaton, Harry W.....	June 21, 1887.
	<i>Wagoner.</i>		14	Fallis, Harry G.....	April 3, 1887.
1	Andrew J. Moore.....	Apr. 27, 1885.	15	Faucett, Louis M.....	Sept. 10, 1884.
	<i>Privates.</i>		16	Faucett, William L.....	June 2, 1886.
1	Acre, George.....	Dec. 13, 1882.	17	Faulk, Harvey.....	Mar. 3, 1886.
2	Allman, William.....	Apr. 16, 1884.	18	Harner, Harry B.....	Aug. 29, 1883.
3	Buckwalter, Calvin D..	April 9, 1884.	19	Kautzman, Worthing'n	May 4, 1884.
4	Barbee, William G.....	Sept. 10, 1884.	20	Messmore, Fred.....	Apr. 16, 1884.
5	Beatty, Stephen C.....	Aug. 29, 1883.	21	Moss, Samuel.....	Aug. 13, 1884.
6	Boughton, Wm. L.....	June 27, 1883.	22	Roberts, William L....	June 21, 1887.
7	Campbell, Charles F....	July 7, 1886.	23	Royer, Charles C	May 11, 1887.
			24	Ward, William C.....	Apr. 27, 1883.
			25	Ward, Charles W.....	June 3, 1886.
			26	Westfall, George.....	Mar. 4, 1885.
			27	Wheeler, George M.....	Apr. 3, 1887.
			28	Whitman, Jacob.....	May 7, 1884.
			29	William, Warren.....	Sept. 10, 1884.

Strength of Company, 45.

FIFTH REGIMENT OF INFANTRY.

FIELD AND STAFF OFFICERS.

Frederick H. Flick.....Colonel.
 John W. Gibbons.....Lieut.-Colonel.
 _____.....Major.
 _____.....Major.
 Herman Mayer.....Adjutant.
 Charles H. Flick....Quartermaster.
 Franklin H. Clark.....Surgeon.
 Carl G. Weber.....Assist. Surgeon.
 John Mitchell.....Chaplain.

Non-Commissioned Staff and Band, with dates of Enlistment.

No.	Name and Rank.	Date of en- listment.	No.	Name and Rank.	Date of en- listment.
	<i>Sergeant-Major.</i>			<i>Leader.</i>	
1	.....	.....	1	Hugh McKenzie.....	Jan. 30, 1883.
	<i>Quartermaster-Sergeant.</i>			<i>Privates.</i>	
1	William E. Wild.....	Dec. 22, 1886.	1	Backus, Lewis.....	Jan. 30, 1883.
	<i>Com.-Sergeant.</i>		2	Betzhold, Ernest	"
1	George Heckerling.....	July 2, 1887.	3	Billson, M. A.....	July 20, 1886.
	<i>Hospital Steward.</i>		4	Brandt, Charles H.....	July 10, 1884.
1	Henry W. Gebaner.....	July 2, 1887.	5	Cone, Charles L.....	July 2, 1887.
	<i>Principal Musicians.</i>		6	Dierferdorfer, J. W.....	June 5, 1885.
1	Phillip Siecrist.....	Jan. 30, 1883.	7	Drews, Edward H.....	July 2, 1887.
2	Richard F. Curtiss.....	"	8	Fry, J. C.....	Aug. 1, 1886.
	<i>Drum-Major.</i>		9	Fox, William.....	Jan. 30, 1883.
1	Thomas J. Lally	July 2, 1887.	10	Fisher, Lawrence.....	Mar. 26, 1885.
			11	Forestall, W. G.....	July 1, 1885.
			12	Griffith, Frank.....	Dec. 4, 1884.
			13	Gundling, J.....	July 10, 1884.
			14	Horn, Henry P.....	Apr. 21, 1886.
			15	Kennedy, Samuel.....	July 10, 1884.
			16	Lentz, Robert.....	Jan. 30 1883.
			17	Murphy, P. J.....	May 6, 1886.
			18	Puchta, G	July 30, 1886.
			19	Rentz, Mathew	Jan. 30, 1884.
			20	Siegrist, J. C.....	July 30, 1883.
			21	Spuhler, John G.....	May 5, 1884.
			22	Stovering, M. A.....	May 6, 1886.
			23	Whitney, Herbert.....	July 10, 1884.
			24	Ziemer, Ed. W.....	"

Strength of Field, Staff and Band, 38.

Co. A—FOREST CITY GUARD—CLEVELAND—Organized August 24, 1882.

OFFICERS.

Llewellyn R. DavisCaptain.
John J. Dalton1st Lieutenant.
George A. Bailey2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Sergeants.			Privates—Continued.		
1	Charles H. Russell	Aug. 24, 1887.	10	Gressley, D.....	April 6, 1886.
2	James P. Seaborn	"	11	Gressley, Ed.....	Oct. 5, 1886.
3	Fred. W. Shernitz	May 23, 1883.	12	Guenther, Wm ..	Mar. 15, 1887.
4	William Boyd.....	Jan. 23, 1883.	13	Goldsmith, J	Jan. 25, 1887.
5	.....	.....	14	Gerring, J. G	Oct. 5, 1886.
Corporals.			15	Gerrand, P. H.....	Sept. 6, 1887.
1	Collin McKenzie	May 1, 1884.	16	Gessler, L	Jan. 4, 1887.
2	William Redhead	July 3, 1883.	17	Hilton, Tom.....	May 25, 1886.
3	Charles McMillan	July 29, 1884.	18	Hayes, James.....	Aug. 24, 1887.
4	John Cummings	"	19	Harper, Chas	" 16, 1887.
5	Walter Marshall.....	Dec. 23, 1884.	20	Isham, Wm	Mar. 2, 1886.
6	Charles Willmore.....	Apr. 29, 1884.	21	Jenks, W. J	Sept. 21, 1886.
7	Morey L. Davis	Aug. 22, 1883.	22	King, Tom	July 17, 1883.
8	Elmer Huge.....	" 25, 1885.	23	Kaltemayer, F	" 30, 1886.
Musicians.			24	Kelso, Wm	May 1, 1887.
1	.....	.....	25	Mussey, N. S	July 27, 1886.
2	.....	.....	26	Mathews, L. O.....	Aug. 31, 1886.
Wagoner.			27	McMahon, Delos	Feb. 1, 1887.
1	.....	.....	28	Newton, Dan	Aug. 31, 1886.
Privates.			29	Nuhfer, Frank	June 14, 1887.
1	Atloff, A	Jan. 25, 1887.	30	Oswald, Geo.....	Mar. 2, 1886.
2	Baird, J. R	May 1, 1884.	31	Reesler, John	Oct. 5, 1886.
3	Boyd, Sam	Mar. 16, 1886.	32	Race, Herbert	Sept. 21, 1886.
4	Bundy, Chas. C.....	Mar. 2, 1886.	33	Sickles, Lester.....	July 19, 1883.
5	Bolton, W. H.....	July 23, 1886.	34	Scott, A. G	Nov. 25, 1885.
6	Davis, Joe	June 14, 1887.	35	Spencer, Geo	May 1, 1885.
7	Folliett, A. H.....	Aug. 22, 1883.	36	Stroh, Harry	May 25, 1886.
8	Gorbet, H. A	Oct. 6, 1885.	37	Shibley, B.....	Oct. 15, 1886.
9	Gregory, G. J.....	Feb. 13, 1883.	38	Traub, John	Jan. 27, 1885.
			39	Thornton, Sam	July 30, 1886.
			40	White, Robert.....	Jan. 1, 1883.
			41	White, James	June 14, 1887.
			42	Williard, H. A.....	Jan. 5, 1886.
			43	Wheeler, F. W	Jan. 27, 1886.
			44	Weaver, Wm.....	June 21, 1887.
			45	Woodworth, C.....	Oct. 5, 1886.

Strength of Company, 60.

CO. B—CLEVELAND CADETS—Organized March 13, 1883.

OFFICERS.

Edmund M. Whitney.....Captain.
Charles E. Marcellus1st Lieutenant.
Ernest F. Cook.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Sergeants.			Privates—Continued.		
1	Oliver S. Hart.....	Mar. 13, 1883.	6	Daley, G. A.....	July 2, 1887.
2	Wesley D. Mitchell.. ...	July 23, 1884.	7	Davidson, C. A.....	Mar. 13, 1883.
3	Rudolph C. Pagel.....	July 22, 1885.	8	Duperow, B. F.....	Apr. 6, 1887.
4	John A. Leshar.....	Mar. 13, 1883.	9	Ellison, Geo. B.....	Mar. 13, 1883.
5	George W. Moore.....	July 9, 1884.	10	Ensign, Harry R.....	August, 1885.
Corporals.			11	Fanand, E. W.....	Aug. 1, 1884.
1	Frank W. Hammett.....	July 26, 1886.	12	Graves, M. C.....	Mar. 13, 1883.
2	George W. Edmondson	Apr. 6, 1887.	13	Goepfert, J. F.....	"
3	Lucien B. Collins.....	July 23, 1884.	14	Hauck, H.....	July 26, 1886.
4	William C. Tegethoff..	July 26, 1886.	15	Kelly, Wm.....	Apr. 4, 1883.
5	Archie E. Fowler.....	Sept. 10, 1883.	16	Laughlin, W. H.....	May 4, 1887.
6	Edward W. Burton.....	June 2, 1887.	17	Leininger, P. A.....	Mar. 13, 1883.
7	William F. Campbell..	Dec. 8, 1886.	18	Lehman, F.....	July 26, 1884.
8	Lew. H. Cook.....	Mar. 28, 1884.	19	Marsh, E. C.....	Mar. 13, 1883.
Musicians.			20	Mott, S. G.....	July 2, 1887.
1	George C. Conley ..	May 29, 1883.	21	McKinstry, H. S.....	Mar. 13, 1883.
2	.....	.....	22	Overbeke, Ed.....	Mar. 13, 1886.
Wagoner.			23	Pike, Ed.....	July 26, 1886.
1	.....	.....	24	Puhl, A.....	Dec. 22, 1886.
Privates.			25	Rowe, D. H.....	Apr. 6, 1887.
1	Auger, E. D.....	Mar. 24, 1886.	26	Saunders, M. W.....	July 9, 1884.
2	Brass, Edgar.....	June 2, 1887.	27	Shuart, H. B.....	Mar. 24, 1886.
3	Burwell, C. A.....	Apr. 9, 1884.	28	Spear, H. A.....	Dec. 9, 1886.
4	Butler, Charles H.....	June 2, 1887.	29	Smith, H. W.....	Mar. 24, 1886.
5	Chester, H. S.....	July 22, 1885.	30	Smies, Louis.....	Mar. 13, 1883.
			31	Shimmon, Wm.....	July 23, 1884.
			32	Squire, B. W.....	Apr. 6, 1887.
			33	Slack, J. S.....	July 16, 1884.
			34	Schermehorn, C. R.....	Mar. 13, 1883.
			35	Starr, R. C.....	June 2, 1887.
			36	Terry, H.....	April 6, 1887.
			37	Tibbitts, G. B.....	July 26, 1886.
			38	Volhopf, F.....	"
			39	Weuestenberg, C. J.....	Mar. 13, 1883.
			40	Wilson, F.....	July 26, 1886.
			41	Wilson, G. W.....	"

Strength of Company, 58.

Co. C—GEAUGA GUARD—BURTON—Organized May 22, 1884.

OFFICERS.

Henry W. Crittenden..... Captain.
 Lester W. Crittenden..... 1st Lieutenant.
 Orrin D. Brainard..... 2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Sergeants.</i>			<i>Privates—Continued.</i>		
1	Will S. Ford	Apr. 23, 1884.	5	Ainsworth, Theron.....	June 15, 1886.
2	Frank Leach	Apr. 17, 1884.	6	Bennett, Adelbert D ...	Apr. 16, 1884.
3	Isaac D. Brainard	"	7	Bishop, Geo W	Aug. 6, 1884.
4	Chas. H. Ford.....	"	8	Brainard, Sylvester A..	Apr. 17, 1884.
5	Robert H. Hick.....	June 4, 1884.	9	Coe, Clifton P	Apr. 18, 1884.
<i>Corporals.</i>			10	Conant, Frank.....	Apr. 16, 1884.
1	Joseph Jones.....	Apr. 16, 1884.	11	Dakin, Will	Apr. 23, 1884.
2	Chas. A. Dakin.	" 22, 1884.	12	Fowler, Chas. H.....	Apr. 19, 1884.
3	Will P. Allshouse.....	" 16, 1884.	13	Hill, Asher B.....	May 20, 1887.
4	Samuel D. Cook.....	" 23, 1884.	14	Hodges, Geo. W.....	Apr. 16, 1884.
5	Harry P. Hotchkiss....	" 22, 1884.	15	Hope, Edward A.....	Apr. 21, 1884.
6	Clarence B. Murdock...	" 16, 1884.	16	Halsted, Miles W	Apr. 19, 1884.
7	Fred. E. Harmon.....	" 16, 1884.	17	Hamilton, Eugene	June 15, 1886.
8	Chauncey Falcott	Mar. 17, 1886.	18	Johnson, Will R	Apr. 16, 1884.
<i>Musicians.</i>			19	Johnson, Henry F	Apr. 21, 1884.
1	.....	.....	20	Knox, Dexter	Nov. 10, 1885.
2	.....	.....	21	Merriman, Shirl H.....	Apr. 16, 1884.
<i>Wagoner.</i>			22	Morse, Alva M... ..	"
1	.....	.....	23	Moore, Alba.....	Apr. 26, 1884.
<i>Privates.</i>			24	Mills, Edward S.....	June 5, 1886.
1	Allshouse, Gay.....	June 12, 1884.	25	Mills, Warren H.....	Dec. 25, 1885.
2	Arnold, Fred.....	May 22, 1884.	26	Miller, Howard A	Apr. 1, 1887.
3	Allen, Watson D	Apr. 19, 1884.	27	Pierce, John S.....	Apr. 20, 1884.
4	Argo, Clarence S	May 26, 1886.	28	Parker, Lee.....	May 20, 1885.
			29	Parker, James.....	Apr. 21, 1884.
			30	Smith, Lane A	Apr. 16, 1884.
			31	Steffe, Jake H	June 5, 1884.
			32	Snow, Joshua A.....	Apr. 22, 1885.
			33	Taylor, Herbert	Aug. 4, 1884.
			34	Warner, Fred C	June 10, 1887.
			35	Wick, Carl B.....	Apr. 22, 1884.
			36	Whittier, Grafton S	June 15, 1886.

Strength of Company, 52.

Co. D—BEREA LIGHT GUARD—BEREA—Organized September 26, 1877.

OFFICERS.

Newell J. Fuller..... Captain.
 1st Lieutenant.
 Milton W. Richards..... 2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Sergeants.</i>			<i>Sergeants—Continued.</i>		
1	.....	.....	4	Ellsworth E. Couch.....	Mar. 12, 1883.
2	Lorenzo E. Frost.....	Aug. 6, 1886.	5	Emmitt M. Carroll	July 12, 1883.
3	William Smith	Apr. 20, 1884.			

Co. D—BEREA LIGHT GUARD—BEREA—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Corporals.</i>			<i>Privates—Continued.</i>		
1	Charles Curtis.....	Mar. 10, 1883.	10	Chamberlin, Fred	July 12, 1886.
2	William H. Stearns	June 7, 1883.	11	Christian, Hugh.....	July 26, 1886.
3	Luther W. Simpson.....	Apr. 10, 1884.	12	Couch, Frank	Mar. 10, 1883.
4	Charles W. Nokes.....	Dec. 13, 1883.	13	Couch, Horatio.....	Feb. 3, 1883.
5	.....	.....	14	Curtis, Guy.....	July 26, 1886.
6	.....	.....	15	Davis, Loyd.....	Apr. 10, 1884.
7	.....	.....	16	Davis, William.....	"
8	.....	.....	17	Fahay, William.....	Aug. 10, 1885.
<i>Musicians.</i>			18	Frost, Edward.....	Aug. 6, 1883.
1	Fremont Davis... ..	July 1, 1887.	19	Hubbard, Ora	Mar. 5, 1884.
2	.....	.....	20	Jordan, John.....	July 2, 1887.
<i>Wagoner.</i>			21	Johnson, Albert A	July 1, 1887.
1	.....	.....	22	Kirk, George	Mar. 5, 1884.
<i>Privates.</i>			23	Kirk, William.....	"
1	Blakeslee, George	Dec. 12, 1884.	24	Kramer, Louis	Aug. 6, 1883.
2	Billiter, Edward.....	June 28, 1883.	25	Loeffler, Andrew	June 12, 1886.
3	Beebe, Laurel F.....	July 2, 1887.	26	Meacham, Samuel.....	Aug. 10, 1885.
4	Campbell, Myron T.....	Apr. 10, 1884.	27	Miller, John H.....	May 14, 1886.
5	Carman, Charles.....	"	28	Neubrand, Percy.....	June 12, 1883.
6	Carman, Harvey	July 26, 1886.	29	Oaks, William.....	May 3, 1883.
7	Caniff, George.....	Apr. 20, 1884.	30	Richey, William	June 28, 1886.
8	Clark, John	Aug. 6, 1883.	31	Seavers, John	June 20, 1883.
9	Chamberlin, Frank.....	July 12, 1886.	32	Seavers, Jacob.....	June 26, 1886.
			33	Stein, Peter.....	June 28, 1886.
			34	Stearling, David.....	"
			35	Weber, Henry.....	July 20, 1884.
			36	Wisner, Daniel C.....	Apr. 20, 1884.
			37	Woodworth, William..	"

Strength of Company, 48.

Co. E—GENEVA RIFLES—GENEVA—Organized November 22, 1878.

OFFICERS.

James P. Woodworth.....Captain.
 Edwin Scoville.....1st Lieutenant.
 Wm. H. Munger2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Sergeants.</i>			<i>Musicians.</i>		
1	E. M. Brainard.....	Dec. 5, 1884.	1	J. H. Sechernell..	June 1, 1883.
2	G. G. Waters.....	June 10, 1886.	2	.....	.....
3	William Woodworth...	Oct. 30, 1883.	<i>Wagoner.</i>		
4	Will Norton.....	June 29, 1883.	1	Tholes Williams.....	Oct. 30, 1883.
5	.....	.....	<i>Privates.</i>		
<i>Corporals.</i>			1	Atkins, A. B.....	July 9, 1886.
1	Frederick W. Atkins...	July 16, 1886.	2	Atkins, V. P.....	July 18, 1884.
2	James F. Austin.....	Aug. 7, 1884.	3	Bartholomew, D. E.....	May 4, 1883.
3	Clark Thorp.....	June 10, 1886.	4	Bartram, A. D.	May 29, 1885.
4	John Copp.....	July 16, 1886.	5	Bates, Milo H.....	July 9, 1886.
5	Will Mott.....	May 4, 1883.	6	Bates, Charles H.....	"
6	Charles Putnam.....	June 10, 1886.	7	Babcox, John.....	Mar. 1, 1883.
7	.....	.....	8	Bishop, John H.....	July 16, 1886.
8	.....	.....	

Co. E—GENEVA RIFLES—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Privates—Continued.</i>			<i>Privates—Continued.</i>		
9	Bishop, Charles J.....	July 9, 1886.	28	Phillips, Frank.....	July 31, 1886.
10	Butler, John.....	Oct. 30, 1883.	29	Pratt, Emery.....	Mar. 25, 1887.
11	Burgett, Harry.....	May 7, 1885.	30	Richardson, F. A.....	July 27, 1884.
12	Chapin, Levi.....	July 9, 1886.	31	Richardson, Harry.....	May 2, 1887.
13	Collor, Rolland.....	July 31, 1884.	32	Rose, Walter C.....	June 6, 1887.
14	Frazer, Wasson.....	June 10, 1886.	33	Smith, Henry C.....	June 10, 1886.
15	Gleason, Ernst.....	June 19, 1885.	34	Strong, A. L.....	July 26, 1884.
16	Hayward, William.....	Jan. 5, 1884.	35	Squires, A. A.....	May 4, 1883.
17	Hutchins, L. F.....	June 10, 1886.	36	Spring, Owen.....	June 1, 1883.
18	Hurlbutt, R. H.....	Jan. 29, 1883.	37	Treat, Elmore.....	Oct. 30, 1883.
19	Klumph, Guy A.....	July 16, 1886.	38	Urch, Samuel.....	July 31, 1886.
20	Leidheiser, H. F.....	July 31, 1886.	39	Westlake, Henry.....	May 2, 1887.
21	Miller, William R.....	Mar. 3, 1883.	40	Wright, G. B.....	June 29, 1883.
22	Moreland, Joseph B....	May 2, 1887.	41	Williams, Harlow.....	Mar. 25, 1887.
23	Merrian, William.....	"	42	Williams, Herman. ...	June 10, 1886.
24	Morris, Herbert.....	June 1, 1883.	43	Woodruff, S. A.....	July 3, 1885.
25	Munger, Willie H.....	June 6, 1886.	44	Woodworth, J. L.....	July 31, 1886.
26	Parker, William.....	Jan. 4, 1883.	45	Wright, Charles.....	May 2, 1887.
27	Pangburn, John F.....	July 31, 1886.			

Strength of Company, 60.

Co. F—CLEVELAND LIGHT GUARD—CLEVELAND—Organized July 30, 1881.

OFFICERS.

Daniel FovargueCaptain.
Charles X. Zimmerman.....1st Lieutenant.
Ernest S. Trayte.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Sergeants.</i>			<i>Musicians.</i>		
1	Charles C. Crockett.....	Dec. 18, 1884.	1	.....	.....
2	John Glueck.....	June 28, 1883.	2	.....	.....
3	August T. Koeckert, Jr.	June 4, 1884.			
4	George Sanger.....	May 8, 1884.	<i>Wagoner.</i>		
5	Oscar Buttner.....	June 5, 1886.	1	.....	.....
<i>Corporals.</i>			<i>Privates.</i>		
1	Charles Sturgess.....	Aug. 10, 1883.	1	Alexander, Charles.....	Sept. 2, 1883.
2	Edward Line.....	July 26, 1883.	2	Bernard, William.....	July 8, 1886.
3	Joseph Edwards.....	May 21, 1885.	3	Brown, T. K. E.....	Nov. 10, 1887.
4	Frank C. J. Lohiser.....	June 19, 1885.	4	Bussman, Charles.....	Mar. 14, 1887.
5	John F. Pennrich.....	Feb. 1, 1886.	5	Bennett, John L.....	June 2, 1887.
6	Albert C. Pagel.....	July 24, 1886.	6	Corner, James.....	Aug. 11, 1883.
7	Bert Oviatt.....	July 8, 1886.	7	Dowling, George F.....	July 12, 1883.
8	.....	.....	

Co. F—CLEVELAND LIGHT GUARD—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Privates—Continued.</i>			<i>Privates—Continued.</i>		
8	Erieson, Charles.....	Apr. 29, 1886.	26	Ortti, William.....	Dec. 2, 1886.
9	Early, William H.....	Mar. 17, 1887.	27	Padgett, James F.....	Mar. 17, 1887.
10	Goggin, William P.....	Mar. 24, 1887.	28	Peunie, David G.....	May 5, 1887.
11	Graham, Thomas	Mar. 10, 1887.	29	Reynolds, James.....	Mar. 24, 1887.
12	Hazen, William.....	Mar. 4, 1886.	30	Santer, Louis	June 30, 1886.
13	Holcomb, Burton.....	July 15, 1886.	31	Sherman, Frank.....	Mar. 17, 1887.
14	Hull, Harry C	April 8, 1886.	32	Sherman, Edward.....	May 5, 1887.
15	Hard, Wilbur E.....	Mar. 24, 1887.	33	Teasdale, Clinton A....	Mar. 11, 1886.
16	Jones, George F.....	July 5, 1886.	34	Thompson, Harry A...	June 2, 1887.
17	Kern, William F.....	May 21, 1885.	35	Vizzard, M. J.....	May 5, 1887.
18	Ketchum, Harry C.....	June 30, 1886.	36	Willert, John	May 10, 1884.
19	Mendenhall, George....	July 22, 1886.	37	Winters, Robert.....	Mar. 18, 1886.
20	Milburn, Richard.....	June 21, 1886.	38	Williams, George.....	June 20, 1886.
21	Melvin, Charles.	Oct. 18, 1886.	39	Wood, Henry.....	June 10, 1886.
22	Milton, Charles.....	June 2, 1887.	40	Wilkshire, Walter W...	Mar. 24, 1887.
23	Niel, Charles.....	July 6, 1884.	41	Yarbrows, Charles.....	Nov. 10, 1887.
24	Norton, Herman G.....	July 24, 1884.	42	Zern, Joseph.....	July 7, 1887.
25	Nachtrieb, Howard L.	Apr. 22, 1886.			

Strength of Company, 57.

Co. G—WESTERN RESERVE GUARD—NORWALK—Organized August 7, 1877.

OFFICERS.

Cortland L. KennanCaptain.
John E. Burnham1st Lieutenant.
Henry L. Kennan2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Sergeants.</i>			<i>Privates.</i>		
1	Clarence H. Ransom ...	Sept. 13, 1886.	1	Beers, Charles.....	April 22, 1885.
2	Clarence L. White.....	Aug. 15, 1887.	2	Berkly, John B.....	May 30, 1885.
3	Andrew R. Smith	April 8, 1884.	3	Bowen, Ambrose.....	June 17, 1885.
4	Fred. W. Christian	July 22, 1884.	4	Briggs, John T	July 21, 1884.
5	Lewis H. Butt.....	Feb. 26, 1884.	5	Butt, Frank H	Nov. 10, 1886.
<i>Corporals.</i>			6	Butt, Will C.....	Apr. 15, 1884.
			7	Considine, Harry.....	July 9, 1884.
			8	Cooper, Henry	July 1, 1887.
1	George Lamkin, Jr.....	Aug. 4, 1884.	9	Coxley, Burtis E	June 17, 1885.
2	Frank H. Jones	Sept. 2, 1885.	10	Davis, Albert W.....	July 22, 1885.
3	Sam. W. Williams	Mar. 15, 1886.	11	Davis, Avery E.....	April 29, 1884.
4	Frank Remington	Mar. 30, 1884.	12	Day, Martin H	July 23, 1884.
5	Edwin G. Underhill....	"	13	Dennis, W. Yale.....	Aug. 6, 1886.
6	Fred. H. Howe.....	June 18, 1884.	14	Fish, Frank S	Apr. 15, 1884.
7	George A. Lambert.....	May 6, 1884.	15	Fries, George F	Dec. 8, 1886.
8	Alwin E. Kinney.....	Apr. 25, 1884.	16	Humbel, Frank.....	Aug. 11, 1886.
<i>Musicians.</i>			17	Kellogg, Earl W.....	Mar. 2, 1887.
1	Wolfgang Turner	Apr. 29, 1884.	18	Kennan, Robert C.....	Aug. 11, 1886.
2	.....	.....	19	Kinney, Willis A.....	Apr. 24, 1884.
<i>Wagoner.</i>			20	Latimer, John M.....	June 27, 1887.
			21	Laylin, George E.....	Aug. 11, 1886.
			22	McGorgan, Walter	July 1, 1887.
			23	Meade, Charles.....	"
1	James McGuckin	Sept. 2, 1887.	24	Meade, Henry B.....	Mar. 30, 1887.
			25	Mesnard, Howard W...	May 4, 1887.

Co. G—WESTERN RESERVE GUARD—NORWALK—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Privates—Continued.</i>			<i>Privates—Continued.</i>		
26	Osborne, James	July 1, 1886.	36	Thomas, Elton B	June 25, 1884.
27	Peat, Will A.	Apr. 29, 1884.	37	Thomas, Chas. A	Sept. 22, 1886.
28	Perkins, Charles E	Apr. 22, 1885.	38	Turner, Harry D	Aug. 6, 1886.
29	Scothan, Benj. G	July 30, 1884.	39	Van Nest, Fred	July 9, 1884.
30	Simon, William.....	June 27, 1887.	40	Webb, Ezra H.....	June 17, 1885.
31	Simpson, Allan	Mar. 30, 1884.	41	West, William H.....	May 6, 1884.
32	Smith, Edwin C.....	May 13, 1884.	42	Wickham, Louis W	July 22, 1884.
33	Soule, Charles R.....	May 8, 1884.	43	Wickes, Hannie.....	June 17, 1885.
34	Suhr, Charles.....	June 18, 1884.	44	Wright, Harry	"
35	Sutton, Clarence E	Aug. 6, 1886.	45	Zeidler, Paul M	May 4, 1887.

Strength of Company, 63.

Co. H—LOGAN RIFLES—YOUNGSTOWN—Organized June 19, 1875.

OFFICERS.

James A. FreedCaptain.
John G. James....1st Lieutenant.
Benjamin L. Thomas.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Sergeants.</i>			<i>Privates.</i>		
1	Wm. L. Haney.....	May 31, 1887.	1	Allen, L. E.....	May 25, 1887.
2	Edwin E. Eckels	Nov. 1, 1887.	2	Anderson, D. F.....	June 25, 1887.
3	Wm. R. Freed.....	July 28, 1886.	3	Bucklin, W. N	June 7, 1887.
4	.....	.....	4	Cartwright, Thos. R....	"
5	.....	.....	5	Centoben, Hen. N.....	Nov. 1, 1887.
<i>Corporals.</i>			6	Dawson, O. J.....	May 25, 1887.
1	Jos. H. Briody	July 20, 1885.	7	Fairgrieve, Jos	Apr. 26, 1887.
2	Albert R. Davis	May 25, 1887.	8	Floor, Milton J.....	May 30, 1887.
3	Dan'l J. Jones.....	"	9	Hilman, H. J.....	Sept. 28, 1887.
4	Richard T. Ellis	May 31, 1887.	10	Ingraham, C. G.....	Nov. 1, 1887.
5	Harry G. Hamilton	April 25, 1885.	11	Jones, F. D	June 7, 1887.
6	.....	.....	12	Klingensmith, Chas....	May 25, 1887.
7	.....	.....	13	Knox, Grant J	"
8	.....	.....	14	King, Singleton	June 28, 1887.
<i>Musicians.</i>			15	Kaersher, H. F	June 10, 1887.
1	.....	.....	16	Lenard, John D	Nov. 1, 1887.
2	Elwood Love	Apr. 7, 1883.	17	McClure, Chas.....	Sept. 13, 1887.
<i>Wagoner.</i>			18	Moore, Ed.....	June 24, 1887.
1	L. V. Ashbaugh.....	June 7, 1887.	19	Moyer, Jos. E	May 31, 1887.
			20	Perkins, W. R.....	May 25, 1887.
			21	Reel, Harry M.....	"
			22	Rigby, Jos. R.....	"
			23	Reeble, Wm.....	June 24, 1887.
			24	Snyder, Geo. B	May 25, 1887.
			25	Whitsler, Grant.....	Apr. 20, 1887.
			26	Waldman, Chas. J.....	Apr. 25, 1887.
			27	Williams, John C	June 7, 1887.
			28	Williams, John H.....	May 25, 1887.
			29	White, J. K.....	June 3, 1887.

Strength of Company, 42.

SIXTH REGIMENT OF INFANTRY.

FIELD AND STAFF OFFICERS.

John C. EntrekinColonel.
Baldwin H. Millikan..... Lieutenant-Colonel.
George Titus.....Major.
Arthur L. Hamilton Major.
F. Marion Cline.....Adjutant.
Orin F. ThompsonQuartermaster.
John C. BishopSurgeon.
Charles O. Dunlap Assistant Surgeon.
Charles F. Dean.....Chaplain.

Non-Commissioned Staff and Band, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
	<i>Sergeant-Major.</i>			<i>Leader.</i>	
1	.....	.....	1	J. H. Neeley.....	Jan. 30, 1886.
	<i>Quartermaster-Sergeant.</i>			<i>Musicians.</i>	
1	George Gearheart.....	Apr. 28, 1882.	1	Bell, H. C.....	June 30, 1885.
	<i>Com.-Sergeant.</i>		2	Bell, William.....	"
			3	Bennett, Link.....	"
1	Charles P. Rowe.....	July 15, 1886.	4	Crothers, J. H., Jr.....	June 25, 1886.
	<i>Hospital Steward.</i>		5	Gressheimer, Albert ...	"
			6	Hughes, Wash.....	June 30, 1885.
1	John H. Cline	June 9, 1886.	7	Kennedy, Charles.....	" 25, 1886.
	<i>Principal Musician.</i>		8	Kingrey, Ed.....	" 30, 1885.
			9	Krewsberg, William ...	"
1	Thomas G. Wellerd	Aug. 3, 1885.	10	Krewsberg, H. W.....	"
	<i>Drum-Major.</i>		11	Lunback, J. D.....	"
			12	Lunback, E. K.....	"
			13	Long, F. Mount.....	June 25, 1885.
			14	McLoren, Felis.....	" 30, 1885.
			15	Neeley, H. Y.....	"
			16	Neeley, P. W.....	"
			17	Scott, Elbert.....	"
			18	Stanley, Harry.....	"

Strength of Field, Staff and Band, 32.

Co. A—SILL GUARD—CHILLICOTHE—Organized August 16, 1878.

OFFICERS.

John W. Ogden.....Captain.
Leonard Treiber.....1st Lieutenant.
Adam Maurer.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
	<i>Sergeants.</i>			<i>Corporals.</i>	
1	Alexander, Reedman .	June 7, 1883.	1	David M. Mathews.....	June 7, 1883.
2	Charles F. Ogden.....	"	2	John Spicer	"
3	W. D. Mathewson.....	"	3	John Welsh	"
4	Joseph Kenrery.....	"	4	William Henn	"
5	William West.....	"	5	Charles Treiber.....	"

Co. A—SILL GUARD—CHILLICOTHE—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Corporals—Continued.			Privates—Continued.		
6	Philip Reeves.....	June 7, 1883.	13	Echo, Theodore.....	May 10, 1884.
7	Edward Evans	"	14	Fisher, Sam.....	July 21, 1885.
8	John Roach	"	15	Foley, Jerry	June 20, 1887.
Musicians.			16	Gilmore, Barton.....	June 18, 1883.
1	Charles B. Paul.....	June 7, 1883.	17	Hamn, George	Jan. 5, 1885.
2	John Raper.....	"	18	Harper, John.....	Mar. 6, 1885.
Wagoner.			19	Inglram, James.....	May 10, 1884.
1	.....	.....	20	Kirsch, Mike.....	Dec. 7, 1883.
Privates.			21	Kline, Charles..	"
1	Burns, John H.....	June 7, 1883.	22	Klepper, Henry	June 20, 1886.
2	Buinen, Charles.....	May 10, 1884.	23	Kirschenschlager, Jake	May 6, 1885.
3	Bratton, John T.....	Aug. 9, 1883.	24	Litler, George... ..	Jan. 10, 1885.
4	Bennett, Robert.....	Sept. 7, 1885.	25	Leinberger, James	July 31, 1885.
5	Brinnon, Mike L.	Mar. 25, 1885.	26	Mathies, Joseph.....	June 21, 1886.
6	Connor, Timothy O.....	July 14, 1883.	27	Moore, John J.....	June 18, 1883.
7	Cross, Frank	Oct. 6, 1885.	28	Merkle, August B.....	Aug. 9, 1883.
8	Crow, Joseph.....	Aug. 8, 1883.	29	Mathews, William	Jan. 1, 1884.
9	Cole, Joseph M.....	Apr. 19, 1883.	30	Poe, James.....	Jan. 20, 1887.
10	Cornmier, Martin.....	June 8, 1885.	31	Rowan, Joseph E.....	June 11, 1883.
11	Dainey, Joseph.....	Oct. 6, 1885.	32	Scully, George	June 18, 1883.
12	Danenberg, William ...	Apr. 25, 1883.	33	Sloan, Albert O.....	"
			34	Smith, John.....	June 20, 1887.
			35	Summersett, William..	June 25, 1883.
			36	Snyder, Peter	Jan. 10, 1885.
			37	Spicer, George.....	Jan. 5, 1883.
			38	Thacker, William H ...	Sept. 1, 1884.
			39	Woodward, George T..	Sept. 1, 1886.

Strength of Company, 57.

Co. B—ELY LIGHT GUARD—WASHINGTON C. H.—Organized April 28, 1875.

OFFICERS.

John P. Maynard.....Captain.
John C. Haffler.....1st Lieutenant.
Alfred N. Van Deman.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Sergeants.			Musicians.		
1	William Vincent.....	Aug. 4, 1885.	1	John Crooks.....	July 7, 1884.
2	LaFayette Ely	Mar. —, 1876.	2	George Melvine.....	"
3	John Hickman.....	July 14, 1885.	Wagoner.		
4	William Sheets.....	July 7, 1884.	1	.....	.....
5	George Coleman.....	July 14, 1885.	Privates.		
Corporals.			1	Alexander Edward.....	July 7, 1884.
1	Lewis Ward.....	June 27, 1885.	2	Adams, George.....	Feb. 8, 1887.
2	Oliver Severs.....	May 15, 1886.	3	Bayliss, Frank.....	June 27, 1885.
3	William Hause.....	July 24, 1885.	4	Bryson, Robert.....	May 26, 1887.
4	John Ott.....	May 1, 1885.	5	Bloomer, Mack.....	Aug. 17, 1878.
5	Eugene Long	July 22, 1885.	6	Backenstoe, William..	July 17, 1885.
6	Ward Pine.....	May 6, 1886.	7	Benner, Peter.....	Feb. 8, 1887.
7	Harry Coffman.....	Feb. 8, 1887.			
8	Virgil White.....	"			

Co. B—ELY LIGHT GUARD—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Privates—Continued.</i>			<i>Privates—Continued.</i>		
8	Brown, C. H.....	Feb. 8, 1887.	29	Meier, Frederick.....	Oct. 20, 1885.
9	Carr, Isaac.....	May 15, 1886.	30	Miller, D. A.....	Feb. 8, 1887.
10	Cleveland, Benjamin...	Feb. 8, 1887.	31	Moon, Sam B....	Apr. 20, 1885.
11	Clark, Elijah.....	July 22, 1885.	32	Nitterhouse, Thomas...	Aug. 3, 1885.
12	Coombs, Elmer.....	July 23, 1885.	33	Noble, John.....	June 28, 1886.
13	Coil, Thomas.....	Aug. 3, 1885.	34	Palmer, Paul.....	Aug. 24, 1883.
14	Conn, D. M.....	Feb. 8, 1887.	35	Phillips, William E....	June 27, 1885.
15	Cubbage, Johnson..	July 25, 1885.	36	Pine, Edward.....	Feb. 8, 1887.
16	Draise, Charles.....	Feb. 8, 1887.	37	Ridgway, Elmer.....	July 14, 1885.
17	Dunn, John.....	July 18, 1885.	38	Rice, Herman.....	Feb. 8, 1887.
18	Everhart, William.....	May 26, 1887.	39	Sager, Henry.....	"
19	Gibson, Harry E.....	"	40	Sexton, Charles.....	May 11, 1886.
20	Green, Cay R.....	Aug. 25, 1882.	41	Simmerson, H. A.....	Aug. 1, 1885.
21	Hare, David.....	May 26, 1887.	42	Skinner, Frank.....	July 14, 1885.
22	Hare, Denny.....	July 14, 1885.	43	Smith, Peter M.....	Dec. 7, 1885.
23	Hinton, Lewis.....	July 18, 1885.	44	Williams, James G.....	June 22, 1886.
24	Hooker, Jesse.....	Mar. 24, 1883.	45	Williams, Joseph.....	July 11, 1885.
25	Kelly, Henry.....	Jan. 16, 1887.	46	Williams, C. M.....	July 14, 1885.
26	Lydy, Charles.....	Feb. 8, 1887.	47	Wigginton, B. W.....	May 26, 1887.
27	Mershon, Dayton.....	May 26, 1887.	48	Wigginton, P. W.....	June 14, 1886.
28	Meyers, John.....	Apr. 28, 1886.	49	Worrell, F. M.....	July 7, 1887.

Strength of Company, 67.

Co. C—ELLISON LIGHT GUARD—MANCHESTER—Organized August 9, 1883.

OFFICERS.

Daniel R. Shriver.....Captain.
 John A. Murray.....1st Lieutenant.
 Dudley B. Phillips.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Sergeants.</i>			<i>Wagoner.</i>		
1	Samuel F. Garrett.....	Aug. 9, 1883.	1	.....	.....
2	Leroy T. Darnell.....	"	<i>Privates.</i>		
3	William Watson.....	"	1	Banks, Harvey.....	July 8, 1884.
4	Joseph E. Cobb.....	"	2	Bullock, Richard H....	"
5	Henry Shields.....	Sept. 12, 1885.	3	Creamer, James L.....	Aug. 9, 1883.
<i>Corporals.</i>			4	Creamer, James W.....	Aug. 24, 1885.
1	Charles D. Matthews...	Aug. 9, 1883.	5	Cooley, Wilber V.....	Aug. 9, 1883.
2	Isaiah Thomas.....	"	6	Cooper, Bascom L.....	Oct. 21, 1886.
3	George W. Smith.....	"	7	Ellis, John W.....	Sept. 12, 1885.
4	Andrew Weaver.....	"	8	Evans, Edgar A.....	May 29, 1884.
5	Simon B. Ellis.....	May 29, 1884.	9	Foster, Isaac T.....	Aug. 9, 1883.
6	Joseph A. Shriver.....	Aug. 9, 1883.	10	Foster, William.....	Oct. 21, 1886.
7	James H. Kelly.....	Aug. 24, 1885.	11	Fisher, John H.....	Aug. 9, 1883.
8	Wesley L. Leedom.....	Aug. 9, 1883.	12	Hayslip, Charles.....	May 29, 1884.
<i>Musicians.</i>			13	Hughes, Edward A.....	Aug. 9, 1883.
1	Frank McCohn.....	May 29, 1884.	14	Jones, Alson M.....	Aug. 24, 1885.
2	James Taylor.....	"	15	Lock, John.....	Aug. 24, 1885.
			16	Leedom, Colwell.....	Oct. 21, 1886.

Co. C—ELLISON LIGHT GUARD—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Privates—Continued.</i>			<i>Privates—Continued.</i>		
17	Lang, Wesley B.....	Aug. 9, 1883.	27	Smith, Peter M.....	Aug. 24, 1885.
18	Markland, William....	Oct. 21, 1886.	28	Truit, John W.....	"
19	Mitchell, House B.....	Aug. 24, 1885.	29	Trotter, James A.....	Sept. 12, 1885.
20	Mitchell, James P.....	Aug. 9, 1883.	30	Trotter, William F.....	Oct. 21, 1886.
21	Meenach, William T...	May 29, 1884.	31	Trotter, Oscar.....	"
22	O'Neill, Thomas.....	Aug. 9, 1883.	32	Thomas, Edward.....	May 20, 1887.
23	Parkes, William C.....	May 29, 1884.	33	Thomas, James B.....	"
24	Santee, Oliver M.....	Aug. 24, 1885.	34	White, Charles G.....	Aug. 9, 1883.
25	Shriver, Byron.....	July 8, 1884.	35	White, Henry T.....	Aug. 24, 1885.
26	Stephenson, William...	May 20, 1887.	36	Wilson, Clarence.....	Aug. 9, 1883.
			37	Yates, Benjamin.....	"

Strength of Company, 55.

Co. D—KIRKER RIFLES—IRONTON—Organized August 11, 1875.

OFFICERS.

Belden V. Hicks.....Captain.
Charles W. Henry.....1st Lieutenant.
Joseph K. Wilson.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Sergeants.</i>			<i>Privates—Continued.</i>		
1	George W. Crawford ...	Oct. 21, 1885.	5	Berkley, Edward.....	April 17, 1885.
2	William W. Lambert...	Oct. 23, 1884.	6	Brawley, Harry	July 7, 1886.
3	Daniel James.....	July 10, 1885.	7	Brawley, Samuel S....	July 24, 1884.
4	Clark Thorn.....	May 15, 1884.	8	Brown, John A.....	July 20, 1887.
5	William M. Howell....	July 2, 1887.	9	Brumfield, John	July 7, 1886.
<i>Corporals.</i>			10	Buck, James	May 6, 1883.
			11	Christian, Edward.....	Apr. 17, 1885.
			12	Cochran, Frank	July 7, 1886.
1	Charles H. Ballard.....	Apr. 18, 1885.	13	Fisher, Andrew	"
2	Edgar Westlake.....	April 5, 1883.	14	Fisher, William C.....	July 20, 1887.
3	William Sanders	Oct. 1, 1885.	15	Goelz, Charles L.....	July 29, 1887.
4	John Gilchrist.....	Oct. 28, 1884.	16	Griffith, Benjamin	July 20, 1887.
5	Robert Blowers.....	Apr. 17, 1885.	17	Griffith, John.....	July 7, 1886.
6	William Griffith.....	Jan. 7, 1886.	18	Hannon, Richard.....	"
7	George Barnes	Feb. 28, 1884.	19	Harbolt, John.....	"
8	Alfred Buckle.....	Feb. 22, 1884.	20	Hogsten, William.....	"
<i>Musicians.</i>			21	James, Oscar	"
			22	Kuhn, Edward.....	"
			23	Lintner, Jacob	"
1	Drake Meeks.....	Sept. 20, 1884.	24	Mace, Aaron.....	July 2, 1886.
2	William Hamilton	July 9, 1885.	25	McQuigg, William M...	July 18, 1885.
<i>Wagoner.</i>			26	Meyers, John.....	July 7, 1886.
			27	Palmer, James.....	"
1	.....	.....	28	Perkins, Isaac.....	"
<i>Privates.</i>			29	Peters, Cam	Mar. 13, 1884.
			30	Sisson, Thomas.....	July 2, 1887.
			31	Spears, George	April 7, 1886.
1	Ainsworth, William....	July 10, 1885.	32	Spears, William.....	April 17, 1886.
2	Anson, Richard	July 7, 1886.	33	Stahl, Henry	April 7, 1886.
3	Anson, Thomas	July 7, 1886.	34	Stumbo, John	Apr. 30, 1885.
4	Bellamy, Oscar.....	"	35	Willis, William W	June 20, 1887.
			36	Wilson, John.....	June 7, 1886.

Strength of Company, 54.

Co. E—MIDLAND GUARD—MT. STERLING—Organized July 11, 1885.

OFFICERS.

William C. Bostwick.....Captain.
Lark Moon....1st Lieutenant.
Charles Toops.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Sergeants.</i>					
1	John T. Hewitt.....	July 11, 1885.	13	Drennen, J. Floyd	June 4, 1887.
2	A. M. Abernathy.....	"	14	Elliott, Otis	July 11, 1885.
3	James E. Dawson	"	15	Ensley, John.....	June 4, 1887.
4	William C. Adkins.....	"	16	Foy, Edward	Jan. 30, 1886.
5	James Marshall	"	17	Finney, Frank	Mar. 13, 1886.
<i>Corporals.</i>					
			18	Graham, Thornton C...	"
			19	Galbreath, Robert.....	July 11, 1885.
			20	Galbreath, Frank H....	May 8, 1886.
1	Harry Terry.....	July 11, 1885.	21	Graham, Edward.....	June 5, 1886.
2	A. Barton DeLong	"	22	Holcomb, Lewis.....	July 11, 1885.
3	William T. Blake	"	23	Holcomb, Benj.....	Jan. 15, 1887.
4	Simon Richeldapher ...	Aug. 12, 1885.	24	Knapp, Charles.....	July 11, 1885.
5	Luther Strain	July 11, 1885.	25	Lutze, Harry E.....	Oct. 23, 1886.
6	William Tuttwiler	June 5, 1886.	26	May, George H.	July 2, 1887.
7	Landy Hill.....	July 11, 1885.	27	Mitchell, Noah R.....	July 17, 1886.
8	.....	.....	28	McAfferty, Thomas.....	July 28, 1885.
<i>Musicians.</i>					
			29	Morton, John A.....	Aug. 29, 1885.
			30	Nicodemus, Howard L.	July 11, 1885.
			31	Nelson, Andy	"
1	Rianza W. Messmore...	July 28, 1885.	32	Noris, David	June 4, 1887.
2	Edward B. Hodges.....	July 11, 1885.	33	Ogden, George W	Aug. 27, 1887.
<i>Wagoner.</i>					
			34	Ott, William	July 11, 1885.
			35	Pancoast, Elmer	"
			36	Porter, William T.....	"
1	.....	.....	37	Phillipps, Edward ..	July 2, 1887.
<i>Privates.</i>					
			38	Robison, Lincoln	July 11, 1885.
			39	Robey, Romey R.....	"
			40	Robey, Isaac P	"
			41	Ross, John W	"
1	Alspaugh, John	June 5, 1886.	42	Sellman, Edward.....	Jan. 2, 1886.
2	Attlesberger, Thomas..	Jan. 15, 1887.	43	Saint, Lee	Aug. 27, 1887.
3	Bogenrief, Nelson.....	July 2, 1887.	44	Smith, William	June 4, 1887.
4	Buckley, Charles M....	July 11, 1885.	45	Troutman, Frank	July 11, 1885.
5	Buckley, Ira.....	"	46	Toops, Scott.....	"
6	Barkley, Charles E.....	June 5, 1886.	47	Terry, Oliver W.....	"
7	Blaine, Harley	July 11, 1885.	48	Tominy, Daniel	"
8	Brooks, Albert L.....	June 4, 1887.	49	Wilson, Robert.....	"
9	Dixon, Thomas M.....	Feb. 27, 1886.	50	Young, John W.....	Dec. 4, 1886.
10	Douglas, Lon	July 11, 1885.	51	Zimmerman, Benj.....	Nov. 25, 1885.
11	Davis, Fred	" 17, 1886.			
12	Downer, Newton.....	" 11, 1885.			

Strength of Company, 68.

Co. F—CIRCLEVILLE GUARD—CIRCLEVILLE—Organized October 15, 1875.

OFFICERS.

Lee O. Anderson..... Captain.
Samuel J. Irwin1st Lieutenant.
John W. Lowe.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Sergeants.			Privates—Continued.		
1	John Shelby.....	Jan. 18, 1885.	5	Collins, William	Feb. 26, 1883.
2	Amos C. Wilson.....	Dec. 12, 1882.	6	Conelly, Macon E.....	Jan. 15, 1887.
3	Thomas Young.....	Feb. 26, 1883.	7	Conner, Moses.....	" 12, 1885.
4	William E. Pickens.....	Jan. 12, 1885.	8	Cook, George	July 6, 1885.
5	William Young	Feb. 26, 1883.	9	Foll, Christy	Mar. 25, 1886.
Corporals.			10	Fox, John W.....	Jan. 15, 1887.
			11	Furnis, John F.....	"
1	Samuel Hessinger.....	Dec. 15, 1882.	12	Goff, Solomon.....	Jan. 1, 1884.
2	Frank Lane	June 8, 1885.	13	Good, John.....	July 2, 1887.
3	Charles Angel	Jan. 16, 1884.	14	Greer, John	July 25, 1886.
4	Samuel Fisher.....	"	15	Griffy, Henry	Nov. 19, 1883.
5	Charles Eskridge.....	Dec. 16, 1882.	16	Hammel, George L.....	May 10, 1887.
6	Elmer Hunter.....	Jan. 25, 1886.	17	Hoffman, Will. G	Mar. 30, 1887.
7	.....	.....	18	Hoerstine, Lewis.....	May 1, 1887.
8	.....	.....	19	Jefferies, Edward J.....	May 15, 1887.
Musicians.			20	Lake, William	Mar. 25, 1886.
1	John T. Kirkendall	May 12, 1887.	21	Luft, Lewis	Jan. 19, 1885.
2	.....	.....	22	Maag, Luther M.....	May 2, 1887.
Wagoner.			23	McGath, Elmer G	July 15, 1886.
1	.....	.....	24	Owens, George S	Aug. 20, 1886.
Privates.			25	Phelps, Samuel.....	July 6, 1885.
1	Bailey, Albert.....	Jan. 15, 1887.	26	Pickens, Allen A.....	June 8, 1885.
2	Batenian, George W.....	May 10, 1887.	27	Roe, Zachary	Jan. 2, 1885.
3	Bellomy, William E.....	Feb. 15, 1887.	28	Secrest, George H	May 15, 1887.
4	Cave, Lewis	May 12, 1887.	29	Shelby, Winter D	Jan. 12, 1885.
			30	Siegwald, Henry	Apr. 1, 1885.
			31	Stout, Nicholas.....	Nov. 19, 1883.
			32	Swearinger, Thomas ...	July 15, 1886.
			33	Thomas, Samuel	Jan. 12, 1885.
			34	Vawters, Albert.	Nov. 1, 1883.
			35	Watson, David	June 15, 1883.
			36	Weaver, Caleb.....	Jan. 15, 1887.

Strength of Company, 51.

Co. G—FENTON GUARD—MCARTHUR—Organized August 16, 1881.

OFFICERS.

Homer C. JonesCaptain.
.....1st Lieutenant.
James R. Cowgill.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Sergeants.			Corporals.		
1	Sanford, B. Snyder.....	Aug. 16, 1886.	1	Henry C. Ward	Aug. 11, 1883.
2	Moses M. Cherry.....	"	2	Clifford L. Jones	Dec. 22, 1883.
3	Vance R. Ambrose	June 30, 1883.	3	Thos. F. Pearce.....	Jan. 24, 1884.
4	Winfield G. Waller	Aug. 11, 1883.	4	Fred. F. Jones.....	April 11, 1885.
5	Joseph E. Atkinson.....	April 12, 1883.	5	William S. Snyder	June 30, 1883.

Co. G—FENTON GUARD—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Corporals—Continued.</i>			<i>Privates—Continued.</i>		
6	T. Wilbur Cherry.....	Apr. 11, 1885.	9	Davis, Bert	June 18, 1886.
7	.....	.....	10	Delay, Clifton	May 9, 1885.
8	.....	.....	11	Fri, David	July 7, 1884.
<i>Musicians.</i>			12	Florence, Felton	June 22, 1886.
1	Thomas G. Wellerd	Aug. 3, 1885.	13	Hunter, Edward	Feb. 14, 1885.
2	George Shocky	Dec. 9, 1886.	14	Jones, Chas H.....	Mar. 31, 1887.
<i>Wagoner.</i>			15	Jones, Ernest W	Aug. 12, 1885.
1	Verdell Scothorn.....	June 26, 1886.	16	Loury, Chas.....	Aug. 2, 1887.
<i>Privates.</i>			17	Lewis, Wm. W	June 18, 1886.
1	Bratton, Edward A.....	Apr. 11, 1885.	18	Morrison, Jas. T.....	July 1, 1887.
2	Bratton, Frank.....	May 14, 1887.	19	Quick, Harvey	June 26, 1886.
3	Barnes, Geo. H.....	Mar. 31, 1887.	20	Quick, James E	July 7, 1885.
4	Bablet, Robt. A	Nov. 6, 1886.	21	Quick, Thos	June 27, 1887.
5	Burr, Wm.....	June 9, 1886.	22	Redd, Greeley.....	June 9, 1886.
6	Cross, Clinton	May 14, 1887.	23	Swaim, Allen.....	July 8, 1884.
7	Cannon, John	May 28, 1885.	24	Snyder, Richard.....	Sept. 30, 1886.
8	Cole, James.....	Mar. 5, 1887.	25	Snyder, Parker.....	Mar. 8, 1887.
			26	Shipley, Watson	Apr. 11, 1884.
			27	Sprague, Elmer	June 23, 1883.
			28	Thorp, George.....	July 27, 1885.
			29	Ullom, Albert	" 7, 1884.
			30	Waltz, Amos	Mar. 5, 1884.

Strength of Company, 46.

Co. I—BISHOP GUARD—MIDDLEPORT—Organized August 17, 1881.

OFFICERS.

.....	Captain.
James B. Hysell	1st Lieutenant.
William A. Giles	2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Sergeants.</i>			<i>Musicians.</i>		
1	Frank E. Bolton	Aug. 18, 1886.	1	Walter Watson.....	July 3, 1883.
2	Chas. E. Glover	"	2	William Besserer.....	July 3, 1884.
3	Wm. V. Willock	"	<i>Wagoner.</i>		
4	Louis Gerber	"	1	.....	.....
5	Arthur H. Dennis.....	Dec. 15, 1887.	<i>Privates.</i>		
<i>Corporals.</i>			1	Allensworth, W. H.....	May 17, 1887.
1	Homer Coe	May 15, 1883.	2	Black, Wm	July 3, 1883.
2	Joseph E. Watson.....	Aug. 18, 1886.	3	Clark, C. E	Mar. 18, 1883.
3	Richard Entsminger ...	"	4	Copeland, R. B.....	July 1, 1885.
4	Chas. E. Everton	May 15, 1883.	5	Dumble, E. W.....	July 3, 1884.
5	Samuel Hobbs	Dec. 15, 1886.	6	Eblin, Frank	June 9, 1886.
6	Chas. Gardner.....	July 3, 1884.	7	Eblin, Jas. E	"
7	Fisher A. Stewart	Aug. 18, 1886.			
8	.....	.....	

Co. I—BISHOP GUARD—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Privates—Continued.</i>			<i>Privates—Continued.</i>		
8	Eiselstein, Abner	July 1, 1885.	27	Pettitt, Joseph.....	Aug. 18, 1886.
9	Entsminger, J. E.....	Aug. 18, 1886.	28	Robinson, H. P.....	June 9, 1886.
10	Gilmore, E. P.	"	29	Runion, Scott	"
11	Glover, Jno. E	Dec. 15, 1887.	30	Russell, Ed. A.....	July 3, 1884.
12	Gorsuch, Wilber A.....	Aug. 18, 1886.	31	Russell, Jasper	"
13	Gorsuch, Wilmer M.....	"	32	Russell, W. C.....	May 17, 1887.
14	Grant, M. N.....	May 17, 1887.	33	Saunders, Burt	Dec. 28, 1886.
15	Hallman, Evan.....	"	34	Seebohm, C. C.	May 17, 1887.
16	Horden, W. T.....	June 9, 1886.	35	Smith, W. B.	June 9, 1886.
17	Hudson, F. C.....	"	36	Springston, Henry	July 1, 1885.
18	Humphrey, S. P	May 17, 1887.	37	Starkey, Chas. A	Aug. 18, 1886.
19	Jones, Otto	"	38	Stiff, Allen	June 16, 1884.
20	Kines, Chas	July 1, 1885.	39	Stout, W. F	May 17, 1887.
21	McMaster, J. C	May 17, 1887.	40	Thompson, David	July 3, 1884.
22	McCaskey, Lewis.....	"	41	Vining, Chas. M	Aug. 18, 1886.
23	Martin, Jno. H.....	June 16, 1884.	42	Vining, E. M.....	Dec. 28, 1886.
24	Moore, Chas. O	July 3, 1884.	43	Woodward, H. W	May 17, 1887.
25	Moore, Melvin	"	44	Workman, D.....	June 9, 1886.
26	Pake, Jos. H	May 17, 1887.			

Strength of Company, 60.

EIGHTH REGIMENT OF INFANTRY.

FIELD AND STAFF OFFICERS.

Arthur L. CongerColonel.
 George R. GygerLieut.-Colonel.
 Curtis V. HardMajor.
 Emmet F. Taggart.....Major.
 A. A. Bartlett.....Adjutant.
 James Taggart, SrQuartermaster.
 Albert C. Belden... Surgeon.
 Emmer C. Farquhar.....Asst. Surgeon.
 John C. Kauffman Chaplain.

Non-Commissioned Staff and Band, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
	<i>Sergeant-Major.</i>			<i>Leader.</i>	
1	Tracy L. Jeffords.....	Aug. 12, 1887.	1	Charles E. York.....	July 20, 1887.
	<i>Quartermaster-Sergeant.</i>			<i>Musicians.</i>	
1	Rufus Sears	Oct. 19, 1886.	1	Drushall, David H	Dec. 30, 1886.
	<i>Commissary-Sergeant.</i>		2	Dice, Samuel E.....	July 20, 1887.
1	R. O. Church	May 25, 1886.	3	Davis, George	Dec. 30, 1886.
	<i>Hospital Steward.</i>		4	Funk, John A.....	July 20, 1887.
1	R. J. Walker	Aug. 18, 1885.	5	Fitzwilliams, John.....	"
	<i>Principal Musicians.</i>		6	Flower, James	"
1	.....	.....	7	Freund, August E	"
2	.....	.....	8	Hartz, Jacob	"
	<i>Drum Major.</i>		9	Kornrump, Wm.....	"
1	Richard Lewis	Aug. 12, 1884.	10	Kimpflin, Alphonso ...	Dec. 30, 1886.
			11	Kolb, Joseph	Aug. 19, 1885.
			12	Kirn, Grant	Dec. 30, 1886.
			13	Lantz, Theodore Wm..	July 20, 1887.
			14	Lantz, Charles W.....	July 20, 1887.
			15	Loose, Herman.....	"
			16	Miller, Stephen Sam ...	Dec. 30, 1886.
			17	Morey, Hiram L	July 20, 1887.
			18	Noltey, Frank.....	"
			19	Palmer, Wm. R.....	Dec. 30, 1886.
			20	Roberts, George A	July 20, 1887.
			21	Rinninger, Jerry J.....	"
			22	Stickle, Wilbur F	"
			23	Wilhelm, Charles A....	Aug. 19, 1885.

Strength of Field, Staff and Band, 38.

Co. A—FINLEY GUARD—BUCYRUS--Organized May 7, 1884.

OFFICERS.

Edward Vollrath.....Captain.
Adam Wurzauf.....1st Lieutenant.
Will Mader.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Sergeants.</i>			<i>Privates—Continued.</i>		
1	Cassius Beilharz.....	Apr. 23, 1884.	6	Couts, Sanford.....	July 10, 1884.
2	Philip Trautman.....	Apr. 22, 1884.	7	Dixon, Andrew.....	Apr. 22, 1884.
3	John Shunk.....	"	8	Dehart, Aaron.....	"
4	Frank Kehrer.....	"	9	Fulton, Andrew.....	"
5	Christ. Kahl.....	"	10	Fegley, Thomas.....	"
<i>Corporals.</i>			11	Heiney, John E.....	Apr. 30, 1884.
1	James Ferree.....	Apr. 22, 1884.	12	Heiney, Alpha.....	April 23, 1884.
2	Arthur Frey.....	July 7, 1884.	13	Hoadly, Lane.....	April 22, 1884.
3	Jacob Shively.....	Apr. 22, 1884.	14	Jump, Wilson.....	July 14, 1886.
4	Will Carle.....	"	15	Kaltsmith, Charles.....	April 22, 1884.
5	Frank Tum.....	"	16	Lauck, Frank B.....	Sept. 18, 1884.
6	James Hopley.....	May 5, 1884.	17	Mahle, George.....	Apr. 22, 1884.
7	Frederick Jones.....	Apr. 30, 1884.	18	Mandsley, Will.....	July 23, 1887.
8	Henry Pfeifer.....	Apr. 22, 1884.	19	McMahon, Terry.....	June 30, 1885.
<i>Musicians.</i>			20	McNutt, G. A.....	May 5, 1884.
1	Albert Gressler.....	Feb. 1, 1886.	21	Meyers, Frank R.....	April 22, 1884.
2	Frank Schaber.....	Aug. 4, 1885.	22	Meyers, Jacob.....	"
<i>Wagoner.</i>			23	Monnett, F. S.....	May 5, 1884.
1	Charles Ritzman.....	Aug. 16, 1884.	24	Monnett, F. W.....	June 23, 1887.
<i>Privates.</i>			25	Morgan, W. H.....	July 22, 1887.
1	Adams, Frank.....	July 19, 1886.	26	Motz, B. F.....	April 28, 1886.
2	Allen, Frank.....	July 16, 1886.	27	Plummer, Maurice.....	April 22, 1884.
3	Bauer, George.....	Apr. 22, 1884.	28	Plummer, Thomas.....	"
4	Codding, R. O.....	Apr. 30, 1884.	29	Reber, Joseph.....	May 7, 1884.
5	Couts, Elmer.....	Apr. 22, 1884.	30	Reeves, Frank.....	Aug. 17, 1885.
			31	Riddlebaugh, Jacob.....	April 22, 1884.
			32	Rinker, Ed.....	"
			33	Saull, G. W.....	"
			34	Scheidegger, John.....	"
			35	Snyder, C. C.....	April 28, 1886.
			36	Stentz, William.....	"
			37	Stricker, August.....	May 5, 1884.

Strength of Company, 56.

Co. B—AKRON CITY GUARD—AKRON—Organized January 3, 1876.

OFFICERS.

Charles W. F. Dick..... Captain.
 Frederick C. Bryan.....1st Lieutenant.
 Ira J. Morrison.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Sergeants.</i>			<i>Privates—Continued.</i>		
1	William A. Gostlin.....	May 1, 1883.	18	Feederlee, Herman O...	Nov. 3, 1885.
2	John W. Randles.....	"	19	Fessenden, Charles.....	April 28, 1887.
3	Adelbert H. Carson.....	"	20	Forney, George W.....	July 10, 1886.
4	George H. Dunn.....	Sept. 28, 1885.	21	French, Sherman	July 22, 1884.
5	Harry G. Chisnell.....	Oct. 28, 1883.	22	Guth, Adam J.....	June 16, 1886.
<i>Corporals.</i>			23	Goodman, Samuel.....	July 29, 1884.
			24	Hauck, Charles.....	Aug. 7, 1883.
1	John Dixon.....	Aug. 7, 1883.	25	Hanshalter, William...	May 14, 1884.
2	Henry L. Sanford.....	"	26	Johnson, Douglas.....	July 29, 1884.
3	Charles E. Gostlin.....	April 10, 1883.	27	Johnson, Louis C.....	Nov. 3, 1885.
4	Samuel G. Rogers.....	Oct. 28, 1885.	28	Kittinger, Burton.....	Aug. 2, 1886.
5	Alexander W. Maynes	Nov. 3, 1885.	29	Kittelberger, W. A.....	Sept. 20, 1887.
6	Chas. A. Himmelman..	Oct. 28, 1885.	30	Koplin, Arthur A.....	Aug. 7, 1883.
7	Harry Spidle.....	May 12, 1884.	31	Labbe, Louis....	Aug. 2, 1886.
8	Charles S. Bock.....	Nov. 3, 1885.	32	Leaver, William.....	June 16, 1887.
<i>Musicians.</i>			33	Limric, Arthur E.....	Nov. 3, 1885.
			34	Long, R. C.....	Sept. 15, 1887.
1	Desemus Sanford.....	Aug. 7, 1883.	35	Martin, Earl T.....	July 4, 1887.
2	William J. C. White....	Aug. 11, 1885.	36	Martin, Ira.....	Aug. 7, 1883.
<i>Wagoner.</i>			37	McMillen, Guy	Sept. 23, 1883.
			38	Miller, Harrison G.....	July 22, 1887.
1	Samuel Bell.....	July 4, 1887.	39	Morey, Gouvernor C....	Nov. 3, 1883.
<i>Privates.</i>			40	Morrison, Emory E....	Apr. 28, 1887.
			41	Myers, R. A.....	Sept. 15, 1887.
1	Brooker, William E....	July 4, 1887.	42	O'Brien, Fred. H	Apr. 28, 1887.
2	Brownell, George E....	Aug. 12, 1883.	43	Priest, Frank B.....	July 10, 1886.
3	Buck, Ferdinand.....	Aug. 2, 1886.	44	Purdy, Arthur.....	Apr. 28, 1887.
4	Chisnell, Fred. C....	Apr. 28, 1887.	45	Peterson, J. Ed.....	Sept. 22, 1887.
5	Church, Frank E	Oct. 28, 1885.	46	Ream, Harvey B.....	Aug. 12, 1884.
6	Clark, Robert H.....	Aug. 2, 1886.	47	Sawyer, William T.....	Nov. 3, 1885.
7	Cole, Fred. H.....	Apr. 28, 1887.	48	Schramm, Henry L....	Oct. 28, 1885.
8	Cook, T. M.....	Sept. 15, 1887.	49	Searles, Forest	July 4, 1887.
9	Corbus, F. G.....	"	50	Searles, Harry J.....	July 13, 1886.
10	Cowan, Loren W.....	Oct. 28, 1885.	51	Seiber, John E.....	Sept. 8, 1887.
11	Dice, John W.	May 12, 1885.	52	Sponsler, Lebbie	May 29, 1883.
12	Dix, Harry.....	June 16, 1887.	53	Smith, William S.....	Jan. 19, 1885.
13	Dodge, H. B.....	Sept. 13, 1887.	54	Stowe, Irving E.....	Oct. 28, 1885.
14	Eichenlaub, William R.	Nov. 3, 1885.	55	Swinehart, George.....	Aug. 12, 1884.
15	Elzbeck, Frank.....	July 4, 1887.	56	Tibbals, Newell L.....	Oct. 30, 1885.
16	Farr, C. Fred.....	Sept. 1, 1886.	57	Triedeman, Gustave....	Aug. 4, 1887.
17	Fasig, Daniel.	Aug. 2, 1886.	58	Viall, Howard... ..	June 16, 1887.
			59	Watters, Charles.....	Apr. 28, 1887.
			60	Walters William F.....	"
			61	West, Evans J.....	June 30, 1887.
			62	Way, Charles.....	Nov. 11, 1885.
			63	Wilcox, Alden W.....	July 27, 1886.

Strength of Company, 82.

Co. C—ASHLAND GUARD—POLK—Organized July 15, 1876.

OFFICERS.

Wm. H. AmbroseCaptain.
David S. Youngblood.....1st Lieutenant.
Edward M. Wicks.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of en- listment.	No.	Name and Rank.	Date of en- listment.
Sergeants.					
1	John C. Gribben.....	July 16, 1887.	5	Biddinger, Eli J.....	Oct. 25, 1884.
2	.....	.....	6	DeArmon, Arthur.....	Aug. 5, 1886.
3	William Shugers.....	July 26, 1884.	7	Drumb, Lorin A	July 17, 1886.
4	Edward Bolley.....	"	8	Diebler, Amos M.....	July 16, 1887.
5	Hudson Ricket.....	July 16, 1887.	9	Ebert, Alion O.....	"
Corporals.			10	Fullington, E. R	June 19, 1883.
			11	Fike, Harvey D.....	Mar. 28, 1885.
1	Arthur H. Wicks.....	Aug. 8, 1885.	12	Fike, John S.....	July 16, 1887.
2	Tink Weeks.....	June 11, 1883.	13	Felger, W. W.....	July 29, 1886.
3	Lorenzo D. Sisson.....	Nov. 29, 1884.	14	Fritzinger, Charles.....	July 26, 1884.
4	.....	.....	15	Heifner, Lorin E.....	July 29, 1886.
5	Raymond Welsh	July 31, 1886.	16	Koons, Romain	May 3, 1884.
6	Milton M. Miller.....	July 11, 1883.	17	Langhery, Charles.....	July 26, 1884.
7	Curtis D. Simmons.....	Nov. 29, 1884.	18	Murry, William D	Nov. 29, 1884.
8	Ulysses Lockhart.....	July 24, 1884.	19	McCarty, John	June 26, 1886.
Musicians.			20	Moon, Samuel.....	Aug. 22, 1887.
			21	Moorey, George	July 16, 1887.
1	Charles Horn.....	Nov. 24, 1883.	22	Neunemaker, William..	Nov. 24, 1884.
2	.....	.....	23	Priest, George W.....	Oct. 25, 1884.
Wagoner.			24	Peet, Charles M	June 26, 1886.
			25	Royer, Franklin.....	Nov. 24, 1885.
1	.....	.....	26	Ricket, William J.....	June 26, 1886.
Privates.			27	Smith, Sanford S.....	Mar. 3, 1884.
			28	Smith, Samuel	July 17, 1886.
1	Artman, John	Nov. 24, 1883.	29	Swope, Joshua.....	Mar. 29, 1884.
2	Beery, Joseph	July 16, 1887.	30	Shaffer, Charles S.....	Mar. 28, 1885.
3	Beck, Enoch G.....	Nov. 29, 1884.	31	Tinsler, Orin K.....	Oct. 25, 1884.
4	Buzzard, Samuel	June 30, 1883.	32	Toomey, James H.....	July 17, 1886.
			33	Tobias, Vernon F	July 16, 1887.
			34	Wireman, John K.....	"
			35	Wiler, Ezra.....	"

Strength of Company, 50.

Co. D—WOOSTER CITY GUARD—WOOSTER—Organized February 26, 1881.

OFFICERS.

Horace N. Clemens.....Captain.
Robert Cameron 1st Lieutenant. |

Forbes Alcock 2d Lieutenant. |

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of en- listment.	No.	Name and Rank.	Date of en- listment.
Sergeants.			Sergeants—Continued.		
1	.....	.....	4	Charles H. Clark	June 29, 1887.
2	Samuel K. Hilterbrant.	Apr. 10, 1886.	5	William C. Myers.....	Apr. 10, 1886.
3	Edwin C. Hard.....	"			

Co. D—WOOSTER CITY GUARD—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Corporals.			Privates—Continued.		
1	.....	.....	11	Ebinger, Herbert F	Feb. 10, 1887.
2	Ross W. Funck	June 22, 1883.	12	Fabel, Frederick E.....	Nov. 24, 1884.
3	Charles Zimmerman ...	Mar. 28, 1884.	13	Gant, Frank A.....	Sept. 26 1885.
4	Samuel C. Speer.....	July 20, 1886.	14	Hesler, Charles H	Apr. 10, 1886.
5	Joseph E. Gray..	June 23, 1883.	15	Hummer, Frank	Nov. 1, 1885.
6	James E. Truesdale.....	July 23, 1886.	16	Hummer, George E ...	Apr. 10, 1886.
7	Charles M. Taylor	Apr. 10, 1886.	17	Ihrig, Charles E.....	Nov. 24, 1884.
8	William G. Whitmore..	June 29, 1887.	18	Jackson, Wm. C.....	Apr. 10, 1886.
Musicians.			19	Luce, Finnie	"
1	Fred. A. Flohr	Feb. 10, 1887.	20	McClure, John S.....	Mar. 24, 1887.
2	George P. M. Ferguson	"	21	McClure, Wilbur D....	June 22, 1883.
Wagoner.			22	Miller, Wilbur A.....	June 30 1884.
1	Joseph McPherson	July 21, 1887.	23	McMillen, Edwin	Mar. 24, 1887.
Privates.			24	Moore, Willie A.....	July 21, 1887.
1	Allis, William H.....	July 23, 1886.	25	Morgan, Wm. F.....	June 29, 1887.
2	Adams, Crofton C.....	Sept. 15, 1886.	26	Mower, Frank B.....	July 21, 1887.
3	Babl, Frank E	June 22, 1883.	27	Osborne, Harvey F.....	Oct. 1, 1885.
4	Banker, Albert H.....	Nov. 24, 1884.	28	Ogan, Morris L.....	July 21, 1887.
5	Bates, Edward P	July 23, 1886.	29	Peckinpugh, Alfred B.	June 28, 1887.
6	Bissell, Samuel S.....	July 21, 1887.	30	Proeger, Julius A.....	Apr. 10, 1886.
7	Conn, Wesley E.....	Nov. 24, 1884.	31	Shively, Frank M....	Oct. 1, 1885.
8	Carothers, Wm. M.....	Sept. 15, 1886.	32	Shellenbarger, Jas. M.	Apr. 10, 1886.
9	Christine, Henry B....	Mar. 24, 1887.	33	Snyder, Jacob H.....	"
10	Eckenroth, Henry W...	July 23, 1886.	34	Snyder, Logan	June 22, 1883.
			35	Sweeney, Jos. W.....	"
			36	Taggart, Carey E.....	Apr. 21, 1887.
			37	Teeple, Guy E.....	June 24, 1887.
			38	Wilhelm, Jesse B	Nov. 24, 1884.
			39	Weber, Charles.....	Oct. 1, 1885.

Strength of Company, 56.

Co. E—EAST PALESTINE GRAYS—EAST PALESTINE—Organized September 4, 1875.

OFFICERS.

Samuel M. Hoon.....Captain.
Solomon H. Maneval.....1st Lieutenant.
Alfred A. Bushong.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Sergeants.			Corporals—Continued.		
1	J. E. Young	May 25, 1883.	4	Wm. H. Bowens	Sept. 18, 1885.
2	Andrew Blair	Aug. 13, 1883.	5	E. W. Sitler	Dec. 28, 1886.
3	S. A. Augustine.....	Mar. 11, 1886.	6	Arthur Berry.....	Aug. 7, 1884.
4	Emmitt E. Farr	Aug. 18, 1885.	7	.....	.....
5	Rade Vanderslic	Dec. 28, 1886.	8	.....	.....
Corporals.			Musicians.		
1	Thomas Todd	Aug. 9, 1884.	1	John Richie	Aug. 2, 1886.
2	Thomas E. Grilson	June 28, 1886.	2	.....	.....
3	George Todd	June 7, 1887.			

Co. E—EAST PALESTINE GRAYS—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
	<i>Wagoner.</i>			<i>Privates—Continued.</i>	
1	Levi Nevell.....	Sept. 17, 1885.	16	Forney, Dennis.....	July 17, 1887.
	<i>Privates.</i>		17	Green, Wm.....	" 17, 1884.
1	Ball, Isaac.....	Apr. 24, 1884.	18	Hoon, A. D.....	Aug. 8, 1885.
2	Burlington, N. K.....	July 23, 1885.	19	Hum, Elmer	June 7, 1887.
3	Betz, Jacob	July 17, 1887.	20	Haas, E. H	Aug. 8, 1885.
4	Bailey, R. E.....	"	21	Hague, George	June 7, 1887.
5	Crum, John	June 28, 1886.	22	Harman, W	Dec. 28, 1886.
6	Cole, Nathan	Dec. 29, 1886.	23	Richie, Martin	Aug. 18, 1884.
7	Casy, John	July 17, 1887.	24	Richie, George.....	Aug. 13, 1884.
8	Cover, Charles.....	"	25	Renchaw, George.....	June 7, 1887.
9	Cover, William.....	"	26	Scott, Grant.....	Aug. 7, 1884.
10	Eyster, Parker	July 23, 1887.	27	Sutherin, J. F.....	July 20, 1887.
11	Eyster, John	"	28	Ward, Samuel.....	June 7, 1886.
12	Esterly, Albert.....	"	29	White, John.....	July 19, 1886.
13	Elge, Henry.....	July 29, 1886.	30	Whitehouse, Thomas...	June 10, 1886.
14	Elwonger, S. F.....	Dec. 28, 1886.	31	Williams, B. C	Dec. 28, 1886.
15	Eaken Sam'l ...	June 28, 1886.	32	Whitacre, E	"
			33	Winnig, T.....	"

Strength of Company, 49.

Co. F—BEACH CITY BLUES—BEACH CITY—Organized June 1, 1876.

OFFICERS.

Cyrus ZimmermanCaptain.
Charles M. Bose1st Lieutenant.
.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
	<i>Sergeants.</i>			<i>Wagoner.</i>	
1	George Collins.....	Jan. 15, 1885.	1	Eli Seese	July 18, 1886.
2	John F. Stamates... ..	Jan. 15, 1887.		<i>Privates.</i>	
3	Thomas Itskim	July 31, 1886.	1	Beichler, Lewis	Aug. 15, 1885.
4	Christian Boatz	July 14, 1883.	2	Brewer, Charles	May 30, 1884.
5	Israel Dunn	Aug. 1, 1885.	3	Bierworth, Charles.....	Aug. 18, 1884.
	<i>Corporals.</i>		4	Caddes, William G	Aug. 1, 1885.
1	Leander Barnabas	Aug. 10, 1885.	5	Caddes, Robert R	"
2	Harvey Rager.....	Jan. 27, 1885.	6	Caddes, James K.....	July 31, 1886.
3	Charles L. Booth	Jan. 31, 1886.	7	Carms, John S	Aug. 18, 1884.
4	Scott Nichols.....	July 31, 1886.	8	Coy, L. W	July 31, 1886.
5	.....	.....	9	Exline, B. F.....	Aug. 17, 1885.
6	.....	.....	10	Fritsche, Henry	May 28, 1883.
7	.....	.....	11	Fritsche, Oscar	"
8	.....	.....	12	Frantz, Levi.....	Aug. 1, 1885.
	<i>Musicians.</i>		13	Foster, Michael.....	"
1	Haman Sprankle	July 31, 1886.	14	Fisher, Martin	Aug. 18, 1884.
2	.....	.....	15	Hattra, William	July 18, 1883.
			16	Hep, Scott.....	Aug. 13, 1884.

Co. F—BEACH CITY BLUES—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
	<i>Privates—Continued.</i>			<i>Privates—Continued.</i>	
17	Jayberg, Wm. E	Aug. 1, 1885.	29	Slayman, Clement B ...	Jan. 27, 1883.
18	Johnson, Charles.....	July 31, 1886.	30	Stein, David.....	July 31, 1886.
19	Keifer, Robert.....	Jan. 15, 1887.	31	Starner, Nicholas.....	May 15, 1884.
20	Lenhart, Frank	Aug. 1, 1885.	32	Sprankle, C. W	Aug. 1, 1885.
21	Linn, Robert.....	July 31, 1886.	33	Taylor, Emanuel.....	July 31, 1886.
22	Martin, Chas. W	July 18, 1883.	34	Shipbaugh, Albright..	Aug. 1, 1885.
23	Marks, Richard	Aug. 15, 1885.	35	Vail, John	May 28, 1887.
24	Maxhimer, Harvey E..	Jan. 27, 1883.	36	Von Gonton, Emil	Aug. 1, 1885.
25	Messer, John.....	Aug. 15, 1885.	37	Weaver, Thomas	Aug. 17, 1885.
26	Nederheiser, F. L	" 1, 1885.	38	Welly, Frank	July 31, 1886.
27	Smith, Benjamin.....	May 30, 1885.	39	Webber, Ed. J.....	July 18, 1883.
28	Slayman, Frank.....	Jan. 27, 1883.	40	Williams, Frank	June 27, 1883.

Strength of Company, 53.

Co. G—WADSWORTH LIGHT GUARD—WADSWORTH—Organized June 3, 1876.

OFFICERS.

Jacob H. RickertCaptain.
John Geisinger.....1st Lieutenant.
Edwin T. Seigfried.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
	<i>Sergeants.</i>			<i>Privates—Continued.</i>	
1	Philander J. Chandler..	July 2, 1883.	5	Cox, John H	June 19, 1886.
2	George H. Newman.....	Aug. 2, 1884.	6	Collar, Thomas.....	June 8, 1887.
3	Edwin D. Geib	May 31, 1884.	7	Fulton, Henry	Mar. 20, 1886.
4	Charles Felix.....	May 5, 1883.	8	Furry, Grant.....	June 19, 1886.
5	John O. Leisy.....	July 4, 1883.	9	Farr, Charles.....	May 3, 1884.
	<i>Corporals.</i>		10	Hard, Hurbert	May 21, 1887.
			11	Hunsberger, Walter....	May 28, 1887.
1	E. A. Smith	May 19, 1883.	12	Heller, Harvey	June 14, 1887.
2	Claude Greisimer.....	Aug. 16, 1884.	13	Ihrie, Charles.....	Aug. 1, 1885.
3	Fred. Falk.....	July 7, 1884.	14	Krout, A. W	Apr. 23, 1887.
4	William Winbigler.....	" 10, 1886.	15	Kintz, Irvn.....	June 14, 1887.
5	Arthur J. Hoffman.....	" 1, 1885.	16	Kunkler, John	" 21, 1887.
6	Nathaniel Parmeter....	Sept. 10, 1884.	17	Kreider, Ealem.....	" 28, 1887.
7	David A. Geib.....	July 10, 1884.	18	Leahman, Charles.....	" "
8	Samuel B. Johnson.....	June 25, 1887.	19	Long, Christ	July 23, 1887.
	<i>Musicians.</i>		20	Morison, John O	May 12, 1887.
1	James F. Sarlouis.....	May 4, 1887.	21	Mohn, William G.....	July 16, 1887.
2	.....	.....	22	Nolf, John	May 12, 1887.
	<i>Wagoner.</i>		23	Persell, Frank.....	May 21, 1887.
1	Alfred J. Koppes	Aug. 18, 1885.	24	Rimer, Frank	July 30, 1885.
	<i>Privates.</i>		25	Rockwell, Earnest	July 27, 1885.
1	Albers, T. J	Apr. 30, 1887.	26	Reese, G. O.....	May 23, 1887.
2	Barnes, James.....	June 14, 1887.	27	Rippley, Franklin.....	June 14, 1887.
3	Baldwin, John	July 16, 1887.	28	Showers, James B.....	" 30, 1885.
4	Crawford, Melvine	May 3, 1886.	29	Spice, Curtis.....	May 12, 1887.
			30	Steel, Charles.....	June 14, 1887.
			31	Seigfried, Frank	" 21, 1887.
			32	Smith, Edgar.....	" 28, 1887.
			33	Sarlouis, William . . .	July 19, 1887.
			34	Welker, Albert F.....	Sept. 19, 1887.
			35	Yoder, Edwin B.....	July 9, 1887.

Strength of Company, 53.

Co. I—GALION CITY GUARD—GALION—Organized May 25, 1885.

OFFICERS.

Balera J. AurandCaptain.
James Ullum.....1st Lieutenant.
Charles Caldwell.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
	<i>Sergeants.</i>			<i>Privates.</i>	
1	James Alverson.....	May 25, 1885.	1	Arter, Frank	May 25, 1885.
2	Theodore Poister.....	"	2	Arter, John	"
3	William Cronenwett...	"	3	Bashford, A. T	"
4	Charles Wittibschlager	"	4	Bashford, Joseph F....	June 7, 1885.
5	.....	.....	5	Cramer, Hayes	Sept. 20, 1887.
	<i>Corporals.</i>		6	Crissinger, Jacob E....	July 1, 1885.
1	Harvey Brewer.....	May 25, 1885.	7	Eise, Henry.	May 25, 1885.
2	.....	.....	8	Ettinger, Jos. H.....	July 18, 1887.
3	Atheriel P. Hopper.....	May 25, 1885.	9	Fehr, Daniel.....	May 25, 1885.
4	James H. Wagoner.....	Aug. 1, 1885.	10	Hasler, John	May 25, 1886.
5	.....	.....	11	Mandeville, Chas. C....	June 6, 1885.
6	.....	.....	12	McNeal, John G.....	July 18, 1887.
7	.....	.....	13	Paxton, James	Dec. 8, 1885.
8	Joseph Rist.....	May 25, 1885.	14	Roether, Jacob F.....	Dec. 24, 1885.
	<i>Musicians.</i>		15	Roesch, J. W.....	Sept. 20, 1887.
1	.....	.....	16	Stewart, Wm D.....	June 1, 1885.
2	.....	.....	17	Smith, Thomas.....	" 7, 1885.
	<i>Wagoner.</i>		18	Simon, John H.....	" 12, 1885.
1	.....	.....	19	Sharrock, Samuel.....	Dec. 15, 1885.
			20	Strickler, Henry	"
			21	Shupple, Chas.....	May 25, 1886.
			22	Traisch, John.....	May 25, 1885.
			23	Yochem, Andrew	"

Strength of Company, 34.

NINTH BATTALION OF INFANTRY.

FIELD AND STAFF OFFICERS.

Benjamin F. Payne.....Major.
John H. Bellair.....Quartermaster.
Jesse Henderson.....Chaplain.

Non-Commissioned Staff and Band, with dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
	<i>Sergeant-Major.</i>				
1	.....	.....		<i>Hospital Steward.</i>	
	<i>Quartermaster-Sergeant.</i>		1	.....	.....
1	William H. Dickson.....	Nov. 15, 1886.		<i>Principal Musicians.</i>	
	<i>Com.-Sergeant.</i>		1	Edward Sanford.....	Nov. 15, 1886.
1	.....	.....	2	.....	.....

Strength of Field and Staff, 5.

Co. A—BUSHNELL GUARD—SPRINGFIELD—Organized April 21, 1874.

OFFICERS.

Scott Martin.....Captain.
John H. Stewart.....1st Lieutenant.
William H. Sherburne.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
	<i>Sergeants.</i>				
1	William H. Smith.....	July 25, 1884.		<i>Musicians.</i>	
2	Alexander Payne.....	July 1, 1886.	1	William Dudley.....	Aug. 8, 1884.
3	Howard Myers.....	May 25, 1883.	2	Dennis Fillmore.....	Oct. 21, 1887.
4	William Smith.....	July 1, 1886.		<i>Wagoner.</i>	
5	Julius Fields.....	“	1	.....	.....
	<i>Corporals.</i>			<i>Privates.</i>	
1	Landan C. Fillmore.....	May 28, 1884.	1	Ayers, Thomas.....	July 17, 1884.
2	William Stafford.....	July 1, 1885.	2	Adams, Albert.....	July 25, 1884.
3	Thomas Webb	Aug. 8, 1884.	3	Archie, Edward.....	Apr. 15, 1884.
4	Benjamin Vaughn.....	May 7, 1886.	4	Anderson, Charles.....	July 22, 1884.
5	Frank Kirby.....	Jan. 14, 1887.	5	Archie, Daniel.....	Nov. 3, 1885.
6	Richard Price.....	Aug. 8, 1884.	6	Askins, James.....	July 1, 1886.
7	John Valentine.....	Sept. 7, 1883.			
8	.....	.....	

Co. A—BUSHNELL GUARD—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Privates—Continued.</i>			<i>Privates—Continued.</i>		
7	Bntler, James.....	Aug. 5, 1884.	28	Kirby, George.....	Jan. 14, 1887.
8	Brown, Joseph.....	July 22, 1886.	29	Knight, John.....	Oct. 28, 1883.
9	Bayless, John.....	July 22, 1884.	30	Logan, David.....	July 1, 1886.
10	Burns, William.....	Jan. 14, 1887.	31	Liverpool, Lincoln.....	June 10, 1887.
11	Conley, George H.....	May 25, 1885.	32	Ladd, Benjamin.....	July 7, 1885.
12	Clark, Spencer.....	Nov. 1, 1887.	33	Lewis, Lemuel.....	May 13, 1884.
13	Dean, Edward.....	Apr. 7, 1886.	34	Miller, Edward.....	Oct. 21, 1887.
14	Dempsey, John.....	July 29, 1884.	35	Peacock, Frank.....	June 17, 1887.
15	Dunn, Alexander C....	July 1, 1884.	36	Perry, William L.....	June 22, 1886.
16	Duncan, Andrew.....	Aug. 8, 1884.	37	Riggs, Thomas.....	Mar. 4, 1886.
17	Fillmore, Lloyd.....	Aug. 9, 1884.	38	Rudd, Charles D.....	Aug. 3, 1883.
18	George, Carey.....	July 15, 1884.	39	Sherman, Cleveland....	Jan. 14, 1887.
19	Hall, George.....	July 25, 1884.	40	Scott, James.....	July 5, 1884.
20	Hunley, William.....	Aug. 3, 1883.	41	Simms, Henry.....	Aug. 8, 1884.
21	Himes, James.....	July 15, 1886.	42	Todd, John L.....	Aug. 25, 1887.
22	Honaker, Gregg C.....	July 15, 1884.	43	White, Charles.....	Mar. 14, 1884.
23	Hunt, Charles.....	June 17, 1887.	44	White, Solomon.....	July 10, 1884.
24	Hutchinson, John.....	Oct. 28, 1887.	45	Wiggins, Lewis.....	July 4, 1885.
25	Jackson, Forest.....	Aug. 8, 1884.	46	Wilkins, James.....	June 27, 1884.
26	Johnson, Charles.....	June 17, 1887.	47	Wills, George A.....	July 1, 1886.
27	Jones, William.....	Oct. 28, 1887.			

Strength of Company, 64.

Co. B—DUFFY GUARD—COLUMBUS—Organized February 9, 1878.

OFFICERS.

Job B. Johnstone.....Captain.
William H. Melton1st Lieutenant.
William Townsend.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Sergeants.</i>			<i>Wagoner.</i>		
1	Norman H. Alston.....	Nov. 29, 1886.	1	.....	.....
2	Daniel T. Williams	Aug. 9, 1883.	<i>Privates.</i>		
3	William James.....	Apr. 2, 1883.	1	Adams, Richard.....	July 19, 1886.
4	Nelson Foster.....	July 9, 1885.	2	Ames, William.....	Aug. 4, 1884.
5	Sumner L. Wallace. ...	May 14, 1886.	3	Bargrow, James W.....	June 9, 1884.
<i>Corporals.</i>			4	Bell, George.....	June 18, 1886.
1	Henry Hutson.....	June 18, 1886.	5	Bell, William.....	"
2	Charles G. Freeman....	July 19, 1886.	6	Black, George M.....	Jan. 24, 1887.
3	Anderson Davis.....	June 18, 1886.	7	Brown, Daniel.....	Sept. 19, 1887.
4	William Crawford.....	Aug. 5, 1886.	8	Buchner, John.....	May 12, 1884.
5	William Freeman.....	July 28, 1885.	9	Clark, James.....	Dec. 6, 1886.
6	Frank Glasgo.....	Aug. 4, 1884.	10	Clark, Frederick.....	June 18, 1886.
7	Henry Walters.....	May 31, 1885.	11	Chavers, William.....	May 12, 1884.
8	Charles Washington....	July 19, 1886.	12	Crimes, William.....	July 4, 1885.
<i>Musicians.</i>			13	Davis, Phillip.....	June 23, 1887.
1	Alexander H. Harris...	July 19, 1885.	14	Davis, Daniel.....	Apr. 11, 1887.
2	Charles Granaway.....	"	15	Duiguid, Henry.....	June 23, 1887.
			16	Finley, William.....	Jan. 21, 1887.
			17	Harris, Frederick H...	Dec. 6, 1886.

Co. B—DUFFY GUARD—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Privates—Continued.</i>			<i>Privates—Continued.</i>		
18	Hunley, Henry	June 20, 1884.	35	Reed, George.....	May 14, 1885.
19	Hopkins, George.....	Jan. 24, 1887.	36	Redman, James.....	July 25, 1885.
20	Jackson, Jacob.....	Aug. 9, 1883.	37	Ryan, Frank.....	May 14, 1885.
21	Jackson, Simon P.....	July 19, 1886.	38	Seward, George	Aug. 15, 1883.
22	Jackson, William.....	June 22, 1882.	39	Smith, John, Jr.	July 28, 1885.
23	Johnson, Henry.....	.....	40	Smith, Thomas.....	July 19, 1886.
24	Lee, John	June 2, 1885.	41	Symms, Albert.....	Aug. 9, 1883.
25	Lewis, Charles A.....	June 23, 1887.	42	Sheaferson, Fred.....	Oct. 3, 1886.
26	Liverpool, James.....	Dec. 29, 1886.	43	Streets, Henry.....	June 21, 1887.
27	Lomuch, John.....	July 19, 1886.	44	Streets, John	Oct. 17, 1887.
28	McFarland, Joe.....	May 5, 1885.	45	Wallace, George C.....	May 7, 1885.
29	Mayweather, William .	May 14, 1885.	46	Waters, William D.....	Aug. 9, 1883.
30	Moore, John.....	Oct. 3, 1887.	47	Weaver, George E.....	Aug. 5, 1883.
31	Mills, Jerry.....	Sept. 6, 1884.	48	Weaver, James... ..	June 18, 1886.
32	Patterson, Frederick...	July 28, 1885.	49	Wadkins, Isom	Nov. 29, 1886.
33	Phillips, John E.....	June 23, 1887.	50	Williams, John C.....	Aug. 15, 1883.
34	Portis, James.....	June 29, 1882.			

Strength of Company, 68.

Co. C—MARTIN LIGHT GUARD—XENIA—Organized June 30, 1884.

OFFICERS.

Harry H. RobinsonCaptain.
James Howard.....1st Lieutenant.
Jeff Foster.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Sergeants.</i>			<i>Musicians.</i>		
1	Garrett E. Lane.....	June 30, 1884.			
2	William D. Lane.....	"	1	William Hutchinson...	June 30, 1884.
3	Charles H. Stewart.....	"	2	John Williams.....	June 18, 1887.
4	John H. Neal.....	"			
5	John W. Banks.....	"	<i>Wagoner.</i>		
<i>Corporals.</i>			1	.....	.....
1	James Smith.....	June 30, 1884.	<i>Privates.</i>		
2	Edward Robinson.	"			
3	Lafayette Lucas.....	"	1	Adkins, Joseph	June 30, 1884.
4	Walter Roots.....	"	2	Allen, Dilard.....	"
5	James Braselton..	Mar. 23, 1885.	3	Anderson, John.....	"
6	Albert Bushon.....	June 30, 1884.	4	Alexander, Taylor.....	"
7	Henry Higgins.....	"	5	Bloodsan, Henry.....	"
8	Philip Jackson.....	"	6	Bolden, William.....	"

Co. C—MARTIN LIGHT GUARD—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Privates—Continued.</i>			<i>Privates—Continued.</i>		
7	Berry, George.....	June 30, 1884.	28	Morris, William L.....	June 30, 1884.
8	Blanton, Strater.....	"	29	Pearson, James.....	"
9	Brown, David.....	"	30	Pearson, Calvin.....	"
10	Bushon, William.....	July 1, 1884.	31	Powell, James.....	Apr. 28, 1887.
11	Cragg, William.....	June 30, 1884.	32	Robinson, James.....	June 30, 1884.
12	Cook, Lafayette.....	"	33	Rodgers, Sidney.....	"
13	Clay, Henry.....	"	34	Shanks, Steven.....	June 30, 1884.
14	Duglass, Daniel.....	"	35	Shamblin, William.....	July 1, 1884.
15	Edward, P. B.....	"	36	Stephens, Joseph.....	June 30, 1884.
16	Granville, Bryant.....	Mar. 23, 1885.	37	Stephens, Edward.....	June 20, 1887.
17	Geatwood, Ed.....	July 20, 1885.	38	Steene, William.....	June 30, 1884.
18	Green, John.....	June 30, 1884.	39	Shoecraft, George.....	"
19	Hutchinson, Ennis.....	"	40	Stepp, Lee.....	"
20	Haggens, Charles E.....	July 20, 1885.	41	Taylor, Morris.....	"
21	Jenkins, Charles.....	June 3, 1884.	42	Washington, George...	"
22	Jackson, Fred.....	Mar. 23, 1885.	43	Williams, Ezra.....	June 19, 1884.
23	Lucas, Alexander.....	June 30, 1884.	44	Willhams, James.....	June 30, 1884.
24	Mathews, William.....	"	45	Williams, Moses.....	"
25	McClure, George.....	"	46	Winn, John A.....	"
26	McFarland, Gid.....	"	47	Winslow, William.....	"
27	Morean, Siprel.....	Mar. 23, 1885.			

Strength of Company, 65.

THIRTEENTH REGIMENT OF INFANTRY.

FIELD AND STAFF OFFICERS.

William J. White.....	Colonel.
Charles D. Thompson.....	Lieut.-Colonel.
Edward Rott	Major.
.....	Major.
David C. Putnam.....	Adjutant.
Bert Whiteley	Quartermaster.
Willis W. Hall	Surgeon.
.....	Asst. Surgeon.
Frank G. Mitchell.....	Chaplain.

Non-Commissioned Staff and Band, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
	<i>Sergeant-Major.</i>			<i>Leader.</i>	
1	.....	.....	1	John Lutz.....	June 30, 1884.
	<i>Quartermaster-Sergeant.</i>			<i>Musicians.</i>	
1	John H. Cisco :.....	July 9, 1884.	1	Bower, Conrad	June 30, 1884.
	<i>Commissary-Sergeant.</i>		2	Boyd, Lewis.....	"
1	John W. Champion	June 20, 1885.	3	Boles, Arthur	"
	<i>Hospital Steward.</i>		4	Byersdoerfer, Conrad ..	"
1	.....	.....	5	Croby, C.....	June 1, 1887.
	<i>Principal Musicians.</i>		6	Albert, Ellis.....	"
1	Chas. T. Ridgely	Mar. 10, 1884.	7	Fleuharty, James.	June 30, 1884.
2	.....	.....	8	Fleuharty, Jacob.....	June 26, 1886.
	<i>Drum Major.</i>		9	Hofer, George.....	June 1, 1887.
1	George Snyder	June 20, 1884.	10	Hughes, Watt	"
			11	Knockel, Charles.....	"
			12	Keller, Jacob.....	"
			13	Ludwig, George.....	"
			14	Maddox, William.....	"
			15	Munzing, William.....	June 30, 1884.
			16	Rees, Corey	Oct. 15, 1885.
			17	Riley, John..	June 26, 1886.
			18	Stamier, Wm.....	June 30, 1884.
			19	Sacker, John	"
			20	Schaffer, Adolph	"
			21	Snyder, William	June 1, 1887.
			22	Williams, S. Vern.....	"
			23	Wagner, Edward.....	"
			24	Yearsley, Wm.....	June 30, 1884.

Strength of Field, Staff and Band, 36.

Co. A—CHAMPION CITY GUARD—SPRINGFIELD—Organized February 23, 1874

OFFICERS.

William Wagner.....Captain.
Carl K. Mower1st Lieutenant.
Charles T. Davis2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Sergeants.			Privates—Continued.		
1	William H. Clark	Mar. 5, 1883.	13	Foote, Ellsworth B.....	Dec. 20, 1886.
2	Chas. J. Bartholomew..	July 16, 1883.	14	Fitzgibbon, Edward.....	Mar. 7, 1887.
3	George Stephans	Sept. 10, 1883	15	Hause, George.....	Sept. 15, 1884.
4	Henry E. Bradford.....	Apr. 21, 1884.	16	Hulse, Frederick E.....	Mar. 2, 1885.
5	Elmer J. Perkins	Oct. 18, 1886.	17	Hill, Harry S.....	Aug. 16, 1886.
Corporals.			18	Hamilton, Albert J.....	Feb. 14, 1887.
1	Frank A. Oates.....	May 12, 1884.	19	Jackson, Harry	Aug. 29, 1887.
2	William Hardy.....	Mar. 24, 1884.	20	Kennedy, Lewis.....	Aug. 11, 1884.
3	August D. Mannhardt..	Apr. 21, 1884.	21	Kemery, William S	Aug. 25, 1884.
4	Emery C. Anderson.....	May 5, 1884.	22	McLellan, Horace.	Aug. 15, 1887.
5	William E. Appleton...	Dec. 7, 1885.	23	Miller, Warren A	May 4, 1885.
6	William G. Kiefer.....	Mar. 7, 1887.	24	Moon, Frank.....	Jan. 4, 1886.
7	.....	.....	25	Massey, Charles.....	June 7, 1886.
8	.....	.....	26	Moon, Sam'l B	Aug. 11, 1887.
Musicians.			27	Mathews, Harry.....	Apr. 11, 1887.
1	Charles T. Ridgely	Mar. 10, 1884.	28	Minnick, James.....	April 6, 1885.
2	Hiram G. Ridgely.....	Mar. 17, 1884.	29	Miller, Mahlon.....	May 23, 1887.
Wagoner. .			30	McCarty, John A.....	Aug. 5, 1887.
1	.....	.....	31	Marshall, John W.....	Aug. 8, 1887.
Privates.			32	Nieberger, Frank	Aug. 26, 1887.
1	Appleton, Charles E ...	Dec. 7, 1885.	33	Poland, William S	Aug. 11, 1884.
2	Bradbury, Wm. H	June 7, 1886.	34	Payne, George.....	June 7, 1886.
3	Baker, Malcolm M.	May 16, 1887.	35	Ross, Victor.....	April 4, 1887.
4	Brailey, Frank A.....	June 27, 1887.	36	Ridgely, F. Byron.....	Aug. 11, 1887.
5	Carnes, Daniel	Feb. 23, 1885.	37	Shetenhelm, Charles ...	Aug. 8, 1884.
6	Campion, John W.....	July 6, 1885.	38	Seymore, Jasper	Feb. 2, 1885.
7	Carpenter, William F..	June 13, 1887.	39	Stoner, Harry B.....	June 8, 1885.
8	Davis, Walter N.....	Dec. 22, 1884.	40	Swartzbaugh, George...	July 20, 1885.
9	Douglas, Howard	July 12, 1886.	41	Seymore, Grant	Oct. 11, 1886.
10	Evans, Hezzie.....	April 4, 1887.	42	Smith, Palmer.....	Aug. 4, 1887.
11	France, Harry T.	June 7, 1886	43	Swonger, Howard.....	May 31, 1887.
12	Frye, Robert R.....	July 19, 1886.	44	Swartz, Elza.....	Aug. 1, 1887.
			45	Tuttle, Leon V	July 20, 1885.
			46	White, Arthur.....	June 1, 1885.
			47	Wylie, Ira B	Nov. 23, 1885.
			48	Wood, Moses E.....	Mar. 28, 1887.
			49	Warren, Joseph.....	Apr. 11, 1887.
			50	Weadon, John T	May 1 st , 1887.
			51	White, Daniel.....	May 23, 1887.

Strength of Company, 67.

Co. B--SCOTT DRAGOONS--HILLSBORO--Organized July 31, 1876.

OFFICERS.

Edward E. Mullenix.....Captain.
 -----1st Lieutenant.
 Edward L. Warson2d Lieutenant.

Enlisted Men with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Sergeants.</i>			<i>Privates—Continued.</i>		
1	Benjamin K. Hanley...	July 1, 1883.	12	Davis, Hyman D	Apr. 1, 1887.
2	Samuel Frank.....	"	13	Fullerton, Aylette	June 10, 1887.
3	Frank McReynolds..	Apr. 29, 1887.	14	Gamble, Charles W.....	Sept. 3, 1886.
4	.....	.....	15	Gorman, John.....	Dec. 16, 1886.
5	.....	.....	16	Graves, Samuel.....	Oct. 13, 1885.
<i>Corporals.</i>			17	Hill, Charles	Sept. 1, 1885.
1	Brough Overman.....	July 1, 1883.	18	Jones, John S	Oct. 10, 1885.
2	Sell Springer	May 1, 1884.	19	Keys, Charles	Apr. 17, 1885.
3	Albinus W. Thornburg	Sept. 1, 1884.	20	Lemon, Edward.....	"
4	Frank Crosen	May 1, 1884.	21	Lemon, George.....	Apr. 15, 1887.
5	George W. Pucket.....	"	22	Mullenix, Middleton...	Mar. 1, 1884.
6	Thomas McCabe.....	Apr. 17, 1885.	23	McConnaughey, Grant	July 1, 1883.
7	.....	.....	24	McConnaughey, A	" 7, 1883.
8	.....	.....	25	McClanahan, Robt. N..	Mar. 18, 1887.
<i>Musicians.</i>			26	McClanahan, Wm. F...	"
1	Thomas L. Bowles	Oct. 10, 1885.	27	McMahan, Michael.....	Dec. 16, 1886.
2	Leroy E. Brown	Sept. 1, 1885.	28	Miller, William G.....	Nov. 27, 1885.
<i>Wagoner.</i>			29	Nye, Charles	July 7, 1884.
1	William Spruance.....	July 1, 1883.	30	Pucket, Henry	Dec. 16, 1886.
<i>Privates.</i>			31	Qualls, William	Oct. 10, 1885.
1	Arthur, Lee	Oct. 10, 1885.	32	Redkey, John G.....	Sept. 1, 1885.
2	Ayres, Harry.....	May 8, 1886.	33	Richards, Joseph E.....	"
3	Bell, John.....	May 13, 1887.	34	Roberts, Luke.....	July 7, 1884.
4	Burke, John.....	Oct. 10, 1885.	35	Roush, John	" 1, 1883.
5	Barrere, Joseph ..	May 13, 1887.	36	Roads, Phil S.....	Apr. 17, 1885.
6	Brownlee, Spencer	July 7, 1884.	37	Sayler, William	May 1, 1884.
7	Cooper, Edwin P.....	May 2, 1887.	38	Shinn, Harry	June 22, 1886.
8	Chaney, John	July 7, 1884.	39	Shade, William.....	Jan. 8, 1887.
9	Chaney, Harry L.....	May 8, 1886.	40	Shephard, Enos	Sept. 1, 1885.
10	Collins, Richard.....	Apr. 17, 1885.	41	Stevenson, Frank	Dec. 16, 1886.
11	Custer, John	July 1, 1886.	42	Vance, Ross.....	July 1, 1883.
			43	Wood, Robert H	Sept. 1, 1885.
			44	Winegardner, Benj.....	Dec. 16, 1886.
			45	Woodson, Willis H.....	Mar. 18, 1887.
			46	Wright, Harry J	Apr. 29, 1887.
			47	Wiggins, Edward M ...	May 27, 1887.
			48	West, Birt.....	Sept. 1, 1885.
			49	Wedding, John.....	May 13, 1887.

•Strength of Company, 63.

Co. C—GERMANTOWN LIGHT GUARD—GERMANTOWN—Organized August 14, 1887.

OFFICERS.

Samuel A. Bousman.....Captain.
James Gunckel.....1st Lieutenant.
Charles E. Boehme2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Sergeants.			Privates.		
1	Frank H. Emley.....	July 5, 1883.	1	Banker, John C.....	June 5, 1883.
2	Joseph Basore.....	Nov. 21, 1882.	2	Bechtolt, Elmer I.....	July 24, 1885.
3	William I. Weisel	"	3	Christine, William.....	Dec. 11, 1883.
4	Charles F. Brown	Oct. 16, 1883.	4	DeWitt, Frank....	Jan. 30, 1883.
5	.....	.....	5	Eminger, George W....	Nov. 21, 1882.
Corporals.			6	Emley, Wesley.....	July 6, 1886.
1	Simon Christine.....	July 6, 1883.	7	Frank, David.....	May 20, 1885.
2	Alvin C. Kercher	July 27, 1883.	8	Gunckel, Charles P.....	June 23, 1885.
3	.....	.....	9	Gunckel, Lewis H.....	Jan. 30, 1883.
4	.....	.....	10	Gephart, Francis W....	Mar. 28, 1885.
5	.....	.....	11	Hora, Albert	Mar. 11, 1884.
6	.....	.....	12	Hayslett, Henry H.....	July 24, 1885.
7	.....	.....	13	Kern, David C.....	Mar. 10, 1883.
8	.....	.....	14	Knoll, William.....	July 28, 1885.
Musicians.			15	Kindig, Daniel W.....	" 24, 1885.
1	Frank Huber.....	Jan. 30, 1883.	16	Long, Moses E.....	" 28, 1885.
2	Frederick Esaias	"	17	Longman, Horatio A...	" 12, 1884.
Wagoner.			18	Long, Harvey E.....	" 24, 1885.
1	Lewis A. Dill.....	July 31, 1883.	19	Morse, Frank.....	June 23, 1885.
			20	Pettitt, Charles.....	Jan. 16, 1883.
			21	Schaeffer, Daniel P.....	Apr. 10, 1883.
			22	Sharrit, Charles	Nov. 21, 1882.
			23	Stettler, Albert.....	June 23, 1885.
			24	Stump, Edward.....	"
			25	Wagner, Clayton.....	Mar. 11, 1884.
			26	Weisel, John	Nov. 21, 1882.
			27	Yinke, Frank	Mar. 10, 1883.

Strength of Company, 39.

Co. D—THOMPSON LIGHT GUARD—GEORGETOWN—Organized September 3, 1877.

OFFICERS.

John G. Rhodes ... Captain.
Frank E. Kerans.....1st Lieutenant.
Thomas C. Smiley2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Sergeants.			Corporals.		
1	John Crouch	May 28, 1886.	1	Thomas Shaw	April 1, 1883.
2	A. B. Jackson.....	Apr. 1, 1883.	2	Geo. Bier.....	"
3	John M. Purdam.....	July 1, 1885.	3	John W. Johnson	"
4	Geo. W. Sneed	Sept. 1, 1883.	4	Victor King	Sept. 3, 1882.
5	William Fee	Apr. 1, 1883.	5	August Stamm....	June 11, 1886.

Co. D—THOMPSON LIGHT GUARD—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Corporals—Continued.</i>			<i>Privates—Continued.</i>		
6	David Thomas.....	June 11, 1886.	12	Hilbert, Leonard.....	May 8, 1885.
7	Christ. Vandegrift.....	Jan. 24, 1884.	13	Helbling, Edward.....	June 11, 1886.
8	R. A. Snodgrass	April 1, 1883.	14	Heizer, Edward	June 1, 1887.
<i>Musicians.</i>			15	Innis, George.....	April 1, 1885.
			16	Jarrison, Saul	June 11, 1886.
1	William Stake.....	Apr. 1, 1883.	17	Jackson, George.....	"
2	.....	.....	18	King, George.....	Sept. 3, 1882.
			19	Loudon, James.	"
<i>Wagoner.</i>			20	Leibermann, Wm. F...	Sept. 28, 1885.
			21	Leibermann, Wm., Jr.	"
1	Geo. Slack.....	Sept. 28, 1885.	22	Martin, Alex	June 28, 1885.
<i>Privates.</i>			23	Preston, Wm	June 1, 1887.
			24	Rice, Frank	May 29, 1885.
1	Arn, John	July 27, 1884.	25	Robbins, Charles	June 1, 1887.
2	Armstrong, Edward ...	June 1, 1887.	26	Shaw, George W	April 1, 1883.
3	Bayne, Frank	Sept. 23, 1883.	27	Stayton, Lewis	"
4	Bier, John.....	Sept. 3, 1883.	28	Stansberry, Albert	April 1, 1884.
5	Brunner, Michael	June 1, 1887.	29	Snyder, John A	June 1, 1887.
6	Brown, Henry.....	June 18, 1886.	30	Tucker, John.....	April 1, 1883.
7	Chatman, William	June 1, 1887.	31	Tyler, Geo. P., Jr ...	May 8, 1885.
8	Coleman, Matrice.....	June 18, 1886.	32	Turner, Charles	Sept. 3, 1883.
9	Dugan, John	May 8, 1886.	33	Vandegrift, William ...	Sept. 1, 1883.
10	Evans, Thomas.....	June 28, 1884.	34	Vandegrift, Abe.....	"
11	Graybill, Walter	June 1, 1887.	35	Waterman, Carr.....	"
			36	White, William	Sept. 28, 1885.
			37	Wells, David	June 11, 1885.

Strength of Company, 55.

Co. E—MIAMI LIGHT GUARD—MIAMISBURG—Organized December 17, 1878.

OFFICERS.

Daniel W. YoungCaptain.
Charles F. Eminger1st Lieutenant.
August Storck2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Sergeants.</i>			<i>Musicians.</i>		
1	Beverly Musselman.....	Jan. 5, 1884.	1	Adam Wagner	June 5, 1885.
2	William C. Rohrer	" 24, 1883.	2	Clarence Kline	July 21, 1886.
3	John N. Hallinan.....	Mar. 27, 1884.	<i>Wagoner.</i>		
4	Andy Sneller.....	Apr. 10, 1884.			
5	.....	.....	1	Harold Fox	June 3, 1886.
<i>Corporals.</i>			<i>Privates.</i>		
1	Mourne Stroeder	Apr. 10, 1884.	1	Bechtold, Francis	June 5, 1885.
2	Wm. Leininger	Mar. 26, 1884.	2	Bechtold, John	May 10, 1884.
3	Fred. Oberer.....	July 1, 1884.	3	Byard, John Siegel.....	May 26, 1887.
4	Charles Buffington	Apr. 16, 1884.	4	Connor, James O	May 10, 1884.
5	.....	.....	5	Daring, Chas	Apr. 15, 1886.
6	.....	.....	6	Devine, Chas	May 10, 1884.
7	.....	.....	7	Evans, S. T.....	June 5, 1884.
8	.....	.....	

Co. E—MIAMI LIGHT GUARD—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Privates—Continued.</i>			<i>Privates—Continued.</i>		
8	Fornsbell, Luther.....	July 17, 1886.	22	Pontious, Chas	Apr. 10, 1884.
9	Feeny, John.....	June 5, 1884.	23	Patterson, Chas	"
10	Gebhard, Amos.....	June 10, 1886.	24	Reichard, G. W.....	Dec. 4, 1884.
11	Goldman, Harry	Apr. 15, 1886.	25	Ream, Albert.....	Apr. 10, 1884.
12	Goonan, Thomas.....	May 26, 1884.	26	Rohrer, Ferdinand	May 10, 1884.
13	Graft, Alex	May 10, 1884.	27	Rogers, J. K.....	"
14	Hecht, Hartman.....	"	28	Roudebush, Wm	April 15, 1884.
15	Herrman, Philip	June 25, 1885.	29	Simonton, George.....	Mar. 26, 1885.
16	Heil, G. D.	Apr. 5, 1886.	30	Storck, Joseph	Dec. 8, 1886.
17	Huber, Allen.....	"	31	Spangler, George.....	Apr. 10, 1884.
18	Horne, Raymond.....	May 10, 1884.	32	Vandyne, Harry	May 14, 1885.
19	Laspe, William.....	July 15, 1885.	33	Ward, John	July 21, 1886.
20	Moessmer, Frank J	July 3, 1886.	34	Zimmerman, Joseph...	Apr. 15, 1885.
21	Phillips, Adam L.....	Feb. 7, 1883.			

Strength of Company, 49.

Co. F—LOVELAND LIGHT GUARD—LOVELAND—Organized May 6, 1882.

OFFICERS.

George W. Brock Captain.
A. B. Brock.....1st Lieutenant.
William Todd2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Sergeants.</i>			<i>Privates—Continued.</i>		
1	Frank Heisel.....	June 7, 1887.	3	Bateman, Wm. H.....	June 28, 1886.
2	A. H. Smith.....	"	4	Bateman, C. A	"
3	George Deisler	June 28, 1886.	5	Browning, Reuben.....	July 23, 1884.
4	Richard Caldwell.....	" 7, 1887.	6	Cushman, Ike	June 4, 1887.
5	Harry H. Lacey.....	July 7, 1884.	7	Cramer, Wesley	May 1, 1884.
<i>Corporals.</i>			8	Doyle, Morris.....	June 7, 1887.
			9	Fenney, David P.....	June 28, 1886.
1	Jos. Schuyler.....	June 7, 1887.	10	Franz, Theodore.....	"
2	W. W. Ramsey.....	"	11	Gaiser, J. W.....	June 7, 1887.
3	Warren Drake.....	June 2, 1887.	12	Hall, Harry	" 4, 1887.
4	William Lynch.....	" 4, 1887.	13	Holenberger, O.....	" 7, 1887.
5	William Hathorn.....	" 28, 1886.	14	Hamilton, John.....	July 23, 1884.
6	Robert Sears	" 7, 1886.	15	Kramer, Mathew.....	Dec. 30, 1884.
7	Harry Hill	" 4, 1886.	16	Lynch, John	June 28, 1886.
8	Daniel O'Connell.....	" 4, 1886.	17	Lynch, Ed.....	" 4, 1887.
<i>Musicians.</i>			18	Lotz, Ed.....	" 7, 1887.
			19	Layman, Frank.....	" 28, 1886.
1	Harry Brock	May 5, 1883.	20	McKibbon, Ed	May 30, 1887.
2	J. E. Smith.....	June 7, 1887.	21	McGuire, W. W	June 28, 1886.
<i>Wagoner.</i>			22	Myers, John.....	" 4, 1887.
			23	Pool, Elmer E.....	" 28, 1886.
1	Frank Rich.....	June 28, 1886.	24	Ramsey, Court.....	" 28, 1886.
<i>Privates.</i>			25	Roberts, W. B.....	Sept. 10, 1883.
			26	Smith, Pat.....	July 23, 1884.
1	Aylstock, J. W.....	June 28, 1886.	27	Skinner, Ed	June 7, 1887.
2	Ackley, Harry	"	28	Shields, Charley.....	"
			29	Simpson, Henry.....	Sept. 10, 1883.
			30	Spaeth, Joseph	May 4, 1883.
			31	Sprague, Isaac.....	July 8, 1884.

Strength of Company, 50.

Co. G—XENIA LIGHT GUARD—XENIA—Organized July 9, 1874.

OFFICERS.

Joseph S. Harris.....Captain.
Harry Richards.....1st Lieutenant.
Charles Gorham.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Sergeants.			Privates—Continued.		
1	Granville F. Day	July 9, 1884.	10	Dawson, Donald B	June 17, 1886.
2	Alva C. Steinberger.....	June 15, 1885.	11	Eyler, Elmer E.....	April 6, 1885.
3	Ules Losey	Nov. 17, 1884.	12	Fessenden, Sumner.....	July 9, 1884.
4	Albert Van Eaton... ..	July 9, 1884.	13	Fishing, Merce.....	"
5	Samuel Gano.....	"	14	Foreman, William	June 17, 1886.
Corporals.			15	Gillespie, John.....	" 10, 1886.
1	Samuel Tracy	July 9, 1884.	16	Gano, Otto.....	May 27, 1886.
2	Clarence F. Booth.....	June 15, 1885.	17	Green, John W.....	July 9, 1884.
3	William Morris	July 9, 1884.	18	Hupman, Harvey.....	"
4	John Heaton	"	19	Hyslop, Robert.....	"
5	Walter Rossiter	"	20	Healey, Conn.....	Sept. 9, 1886.
6	William E. Carr.....	June 10, 1886.	21	Harris, Arthur W.....	June 15, 1885.
7	.....	.....	22	Higgins, Nelson.....	July 11, 1885.
8	.....	.....	23	Hampton, Calvin.....	May 27, 1886.
Musicians.			24	Henry, Charles.....	Oct. 6, 1887.
1	James Richards	July 9, 1884.	25	Herst, Jethrow.....	Sept. 30, 1886.
2	Edwin Richards.....	May 27, 1886.	26	Knox, Charles.....	June 10, 1886.
Wagoner.			27	Knott, Oliver.....	"
1	.....	.....	28	Knott, Allen	May 27, 1886.
Privates.			29	Lloyd, Frank....	July 9, 1884.
1	Anderson, William.....	June 28, 1886.	30	McClellan, Frank	"
2	Bone, Harry	" 10, 1886.	31	McClellan, Clark.....	"
3	Bratton, Wallace	Oct. 6, 1887.	32	McDaniel, Chancy.....	June 17, 1887.
4	Canaday, William.....	Aug. 26, 1886.	33	Owens, George	Sept. 30, 1886.
5	Collier, Frank.....	July 9, 1884.	34	Oglesbee, Harry C	Aug. 25, 1884.
6	Collier, Charles E	June 25, 1886.	35	Plummer, Shepard	June 3, 1886.
7	Cox, John	July 9, 1884.	36	Ratliff, Warren.....	Aug. 12, 1886.
8	Davis, Charles.....	May 19, 1887.	37	Robinson, Albert.....	June 10, 1886.
9	Daughters, Frank	June 17, 1886.	38	Riley, David F.	" 17, 1886.
			39	Rogers, Harry.....	" 10, 1886.
			40	Richards, James W	July 9, 1884.
			41	Rader, William.....	"
			42	Simison, John A	Aug. 26, 1886.
			43	Shambaugh, Charles ..	June 2, 1885.
			44	Shaner, William H.....	July 9, 1884.
			45	Taylor, Eldoras G.....	"
			46	Woods, Joseph.....	June 17, 1886.

Strength of Company, 62.

Co. H—BARRON GUARD—NEW VIENNA—Organized August 27 1885.

OFFICERS.

William C. Williams.....Captain.
John Shepard.....1st Lieutenant.
.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Sergeants.			Privates—Continued.		
1	Frank Wright.....	Aug. 27, 1885.	7	Clark, Asa.....	Aug. 27, 1885.
2	Isaiah Brewer.....	"	8	Clark, John H.....	Sept. 15, 1885.
3	Frederick Baker.....	Sept. 17, 1885.	9	Clark, Clinton M.....	Aug. 27, 1885.
4	John M. Clark.....	Aug. 27, 1885.	10	Clark, Carlos E.....	June 28, 1886.
5	Marce Hunt.....	" 27, 1887.	11	Carr, David.....	Aug. 27, 1885.
Corporals.			12	Driskill, Milton.....	"
1	John Pemberton.....	Aug. 27, 1885.	13	Elliott, William.....	"
2	Alexander Foster.....	"	14	Fenner, Preston.....	"
3	Clarence Smith.....	"	15	Frame, William.....	"
4	Harry Woodmansee.....	"	16	Harrison, Samuel R.....	"
5	Frank Deck.....	Aug. 27, 1887.	17	Kepler, George W.....	"
6	.....	.....	18	Leggett, Jacob.....	"
7	.....	.....	19	Moon, Hartzel.....	"
8	.....	.....	20	Morris, William.....	June 21, 1886.
Musicians.			21	McClure, Robert T.....	Apr. 1, 1887.
1	.....	.....	22	Nelson, James W.....	Aug. 27, 1885.
2	.....	.....	23	Oxley, George.....	"
Wagoner.			24	Quigley, Homer.....	"
1	.....	.....	25	Rambo, Benton.....	"
Privates.			26	Riley, Thomas.....	Mar. 4, 1887.
1	Brown, William R.....	Aug. 27, 1885.	27	Swonger, James.....	Apr. 1, 1887.
2	Brown, John.....	June 17, 1886.	28	Swonger, Thomas.....	June 21, 1886.
3	Brown, Francis.....	Apr. 1, 1887.	29	Swonger, Boyd.....	April 1, 1887.
4	Bell, William.....	Aug. 27, 1885.	30	Smith, Henry.....	Aug. 27, 1885.
5	Bell, Grant.....	"	31	Sharp, Brison.....	"
6	Brewer, Charles.....	Mar. 1, 1887.	32	Smithson, Dabney.....	"
			33	Shawver, Oscar.....	"
			34	Stephens, John.....	Mar. 18, 1887.
			35	Shepard, Nathan H.....	April 1, 1887.
			36	Townsend, Calvin.....	Aug. 27, 1885.
			37	Tharr, John.....	"
			38	Trenary, Stephen.....	"
			39	Trenary, Cyrus.....	"
			40	Ursell, James.....	Apr. 1, 1887.

Strength of Company, 52.

FOURTEENTH REGIMENT OF INFANTRY.

FIELD AND STAFF OFFICERS.

George D. Freeman.....Colonel.
Andrew Schwarz..... Lieutenant-Colonel.
A. B. Coit.....Major.
-----.....Major.
T. R. Fletcher.....Adjutant.
H. A. Guitner.....Quartermaster.
L. T. Guerin.....Surgeon.
Fred. Gunsaulus... ..Assistant Surgeon.
Wm. E. Moore..Chaplain.

Non-Commissioned Staff and Band, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
	<i>Sergeant-Major.</i>			<i>Leader.</i>	
1	Clarence A. Alexander..	Apr. 9, 1884.	1	J. W. Fitzgerald.....	Nov. 10, 1886.
	<i>Quartermaster-Sergeant.</i>			<i>Musicians.</i>	
1	George Dowdel.....	July 26, 1887.	1	Allen, William.....	Aug. 6, 1887.
	<i>Com.-Sergeant.</i>		2	Adams, Henry.....	"
1	Thomas Potts, Jr.....	June 7, 1885.	3	Adams, William.....	"
	<i>Hospital Steward.</i>		4	Blake, F. H.....	Nov. 10, 1886.
1	John W. Richards.....	Aug. 2, 1887.	5	Bourmocker, S. G.....	July 27, 1887.
	<i>Principal Musicians.</i>		6	Cornell, Frank.....	Nov. 10, 1886.
1	Conrad Smith.....	July 19, 1887.	7	Custer, L. E... ..	Aug. 6, 1887.
2	W. D. Porter.....	July 14, 1884.	8	Daugherty, J. A.....	Aug. 6, 1887.
	<i>Drum-Major.</i>		9	Daugherty, J. F.....	"
1	George Nichols.....	July 27, 1887.	10	Freewald, George A....	Nov. 10, 1886.
			11	Farnum, B.....	July 27, 1887.
			12	Grant, Charles C.....	June 1, 1883.
			13	Kraus, Michel.....	June 30, 1885.
			14	Knell, W. F... ..	July 14, 1884.
			15	Milburn, Robert.....	June 1, 1883.
			16	Milburn, J. M.....	Aug. 6, 1887.
			17	Nichols, Purl.....	Aug. 15, 1884.
			18	Pender, T. H.....	Aug. 6, 1887.
			19	Rorick, J. M.....	Nov. 10, 1886.
			20	Snyder, William S.....	June 1, 1883.
			21	Stewart, George K.....	Nov. 10, 1886.
			22	Stevens, Fred. A.....	July 28, 1885.
			23	Weltz, L., Jr	July 27, 1887.
			24	Williard, B.....	Nov. 10, 1886.

Strength of Field, Staff and Band, 40.

Co. A—PUGH VIDETTES—COLUMBUS—Organized February 9, 1877.

OFFICERS.

Albert B. GoreCaptain.
Edwin G. Bailey1st Lieutenant.
George H. Murray2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Sergeants.			Privates—Continued.		
1	Fred. Smith	Nov. 20, 1882.	5	Cosgray, John N	Aug. 5, 1887.
2	Arthur E. Paul.....	Aug. 5, 1887.	6	Davidson, Charles M ...	April 3, 1885.
3	William Dunlap.....	July 14, 1886.	7	Eylar, Albert.....	Aug. 5, 1887.
4	D. Tod Davis	Aug. 5, 1887.	8	Freeman, Wm. W.....	July 19, 1885.
5	Frank Heckler	July 28, 1884.	9	Freeman, Harry.....	June 5, 1885.
Corporals.			10	Flickinger, John W	Aug. 2, 1887.
1	Albert Swartz	July 14, 1884.	11	Guerin, Eugene	July 25, 1886.
2	Frank P. Wilcox	July 27, 1885.	12	Harbin, Wm. C.....	June 7, 1886.
3	D. Oliver Davies.....	June 5, 1885.	13	Hamilton, Oliver E	June 28, 1886.
4	Phil. B. Harrison.....	Aug. 5, 1887.	14	Hull, Marmaduke C....	July 31, 1885.
5	John A. Sage	Aug. 4, 1887.	15	Hull, Richard E.....	July 30, 1883.
6	William Shedd.....	June 27, 1883.	16	Hulce, George.....	June 28, 1886.
7	William P. Smith	Aug. 1, 1887.	17	Jackson, Cornelius.....	Aug. 5, 1887.
8	.....	.....	18	Kight, William	July 28, 1884.
Musicians.			19	Kight, Thompson H....	Aug. 1, 1887.
1	Harry C. Johns.....	Aug. 5, 1887.	20	Knell, Fred. H	July 28, 1884.
2	Edward A. Smith	"	21	Mitchell, John A	Aug. 2, 1883.
Wagoner.			22	Moore, Henry M. W ...	July 19, 1885.
1	John Trogus.....	Aug. 5, 1887.	23	Moore, Fred.....	July 28, 1884.
Privates.			24	McElvane, Joe	July 20, 1886.
1	Brake, Charles A	June 7, 1886.	25	Ray, James H.....	June 2, 1884.
2	Clevenger, Edgar....	July 19, 1883.	26	Ray, William M.....	Aug. 5, 1887.
3	Craft, Ernest	July 31, 1885.	27	Ranney, John W	" 1, 1887.
4	Crowley, James J	Nov. 20, 1882.	28	Sharp, Augustus W	Aug. 5, 1887.
			29	Shedd, Denman K.....	"
			30	Snider, Charles L.....	June 27, 1883.
			31	Smart, Herbert.....	June 30, 1884.
			32	Smith, Robert B.....	Aug. 5, 1887.
			33	Walcutt, Albert O.....	June 27, 1883.
			34	Wilkins, Charles L....	Aug. 1, 1887.
			35	Wilson, James	Aug. 5, 1887.
			36	Weiland, Edward	Apr. 18, 1887.

Strength of Company, 54.

Co. B—THURMAN LIGHT GUARD—COLUMBUS—Organized January 19, 1877.

OFFICERS.

Charles C. Sleffel.....Captain.
Edward Draudt1st Lieutenant.
John Cunningham.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Sergeants.			Corporals.		
1	Homer Watson	Mar. 10, 1887.	1	George D. Fisher	July 9, 1884.
2	Gus. Sleffel.....	Aug. 15, 1883.	2	Edward McCoy.....	June 12, 1884.
3	Joseph Briggs	Mar. 6, 1883.	3	Charles Kinzle	June 24, 1883.
4	Richard Gorley.....	July 31, 1883.	4	Charles Driskell.....	Aug. 8, 1883.
5	Elmer Connell	June 20, 1883.	5	Charles Lilley	July 19, 1887.

Co. B—THURMAN LIGHT GUARD—Continued.

No.	Name and Rank.	Date of en- listment.	No.	Name and Rank.	Date of en- listment.
Corporals—Continued.			Privates—Continued.		
6	William Moccobee	July 20, 1883.	12	Haycock, John	June 23, 1883.
7	.....	.....	13	Howell, William	July 26, 1887.
8	.....	.....	14	Huff, Oscar	Nov. 26, 1886.
Musicians.			15	Haffer, Charles	Mar. 31, 1886.
1	Frank Thomas	July 14, 1887.	16	Johnson, William B....	July 31, 1886.
2	Wallace Johns.....	Aug. 1, 1887.	17	Johnson, G. W	July 15, 1884.
Wagoner.			18	Julian, Fred.....	Feb. 6, 1887.
1	.....	.....	19	Jenkins, Harry....	Jan. 25, 1886.
Privates.			20	Kight, Horace.....	July 28, 1884.
1	Alkire, Hosea	Mar. 16, 1883.	21	Morris, Charles.....	July 12, 1887.
2	Bailey, Fred.....	July 15, 1884.	22	Miles, Joseph.....	Sept. 25, 1887.
3	Burns, George F	July 14, 1887.	23	Oyler, Frank	Nov. 26, 1887.
4	Buckingham, Samuel...	Nov. 15, 1886.	24	Osborn, Dell.....	July 26, 1886.
5	Bracks, Frank.....	Jan. 10, 1885.	25	Powell, Moses.....	July 26, 1885.
6	Buckey, M. C....	" 6, 1883.	26	Redman, William	July 25, 1885.
7	Blime, Burt	Sept. 25, 1887.	27	Searles, Charles.....	July 12, 1884.
8	Ford, Charles.....	July 26, 1886.	28	Smith, Albert	July 26, 1884.
9	Freeman, Stanton.....	July 31, 1885.	29	Thurston, C. H	June 13, 1887.
10	Fix, William	July 14, 1887.	30	Veith, Henry	Apr. 15, 1883.
11	Gorley, John	Jan. 19, 1885.	31	Walls, J. W	Mar. 20, 1884.
			32	Wolf, Lewis.....	May 25, 1885.
			33	Williams, Charles	July 26, 1886.
			34	Williams, Wes	July 12, 1887.
			35	Williams, John.....	"

Strength of Company, 51.

Co. C—, WESTERVILLE—Organized October 2, 1877.

OFFICERS.

Henry Schick.....Captain.
Curtis C. Martin1st Lieutenant.
John M. Brown.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of en- listment.	No.	Name and Rank.	Date of en- listment.
Sergeants.			Musicians.		
1	J. T. Sked	July 30, 1887.	1	.....	.....
2	.....	.....	2	.....	.....
3	.....	.....	Wagoner.		
4	John S. LaHew	May 12, 1884.	1	.....	.....
5	Ellsworth E. Schrock ..	"	Privates.		
Corporals.			1	Aderson, F. M.....	July 30, 1887.
1	.....	.....	2	Anderson, Luther.....	Jan. 25, 1887.
2	Wm. L. McElhainney..	Apr. 24, 1885.	3	Beard, George H	June 11, 1886.
3	Don C. Lawson.....	Aug. 4, 1884.	4	Blain, William B	May 31, 1886.
4	George H. Taylor	April 8, 1885.	5	Bracken, Will C.....	Oct. 11, 1884.
5	.....	.....	6	Brewer, George.....	July 31, 1885.
6	.....	.....	7	Carr, George.....	June 5, 1886.
7	John L. Spencer.....	Jan. 25, 1887.			
8	.....	.....	

Co. C-----, WESTERVILLE—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
	<i>Privates—Continued.</i>			<i>Privates—Continued.</i>	
8	Closson, Joseph	Mar. 30, 1885.	20	Loor, Henry H.....	July 7, 1884.
9	DeWitt, Leslie	June 5, 1886.	21	Lee, Samuel.....	Mar. 29, 1887.
10	Dickerson, Charles	July 12, 1884.	22	Longhenry, Lewis H...	Apr. 3, 1885.
11	Downey, J. S	May 3, 1886.	23	Martin, Mark.....	Aug. 4, 1884.
12	Dunlap, William F.....	June 11, 1886.	24	Phinney, Henry C.....	May 16, 1885.
13	Forsyth, Thomas E.	Jan. 2, 1886.	25	Ranck, Francis M.....	Apr. 21, 1884.
14	Fouse, William.....	July 30, 1883.	26	Smith, Frank E.....	May 9, 1885.
15	Ganong, Ellsworth.....	Apr. 24, 1885.	27	Smith, John L.....	Apr. 8, 1885.
16	Heischman, E. L.....	Aug. 3, 1887.	28	Shanahan, John W.....	May 9, 1885.
17	Hennis, E. L	"	29	Smothers, Alvin T	Aug. 18, 1885.
18	Haynes, Will.....	Feb. 10, 1886.	30	Ulry, Reuben L.....	Aug. 3, 1887.
19	Loor, Elijah C.....	July 7, 1884.	31	Warman, John W.....	May 31, 1886.

Strength of Company, 41.

Co. D—CURRY CADETS—MARYSVILLE—Organized July 18, 1877.

OFFICERS.

.....Captain.
Frank F. Ford.....1st Lieutenant.
Elzie Parthmore.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
	<i>Sergeants.</i>			<i>Privates.</i>	
1	Enos Ainsworth.....	Feb. 5, 1884.	1	Agner, Harry	Apr. 22, 1887.
2	Fay Harrington.....	Mar. 19, 1883.	2	Alexander, H. D	June 8, 1886.
3	Albert Foote	Oct. 21, 1884.	3	Beightler, Peter.....	" 7, 1886.
4	Robert Fry.....	Mar. 25, 1884.	4	Butz, Chas.....	May 5, 1885.
5	.....	.....	5	Courter, Harry	" 10, 1887.
	<i>Corporals.</i>		6	Courter, Frank.....	Feb. 23, 1886.
			7	Daugherty, Thon as.....	June 2, 1886.
1	Charles Hopkins	Feb. 12, 1884.	8	Dillon, Mike	Feb. 9, 1886.
2	Harry McCord	April 15, 1884.	9	Elliott, Morton.....	Apr. 22, 1884.
3	Will F. Justice	May 6, 1884.	10	Ferris, Ed.....	Feb. 12, 1884.
4	James Oppihle	May 5, 1885.	11	Foote, Arthur	May 6, 1884.
5	Elzie Mills.....	Apr. 15, 1884.	12	Gibson, Jas.....	June 16, 1885.
6	Charles Braun.....	July 14, 1885.	13	Holycross, Clarence	May 22, 1885.
7	.....	.....	14	Hornbeck, Will	Apr. 27, 1886.
8	.....	.....	15	Kightlinger, Will.....	Feb. 9, 1886.
	<i>Musicians.</i>		16	Kimball, Hudson.....	Apr. 5, 1887.
1	Frank Welch.....	Jan. 24, 1884.	17	Lansdown, John	June 16, 1885.
2	Eugene Patrick.....	Apr. 15, 1884.	18	Lee, James	Apr. 12, 1887.
	<i>Wagoner.</i>		19	Lee, Charles.....	Apr. 22, 1887.
1	.....	.....	20	McDaniels, Bert.....	May 5, 1885.
			21	Powers, Thomas	Aug. 9, 1887.
			22	Reed, Will..H.....	June 2, 1886.
			23	Staley, Frank R	"
			24	Snodgrass, Judy	Aug. 5, 1887.
			25	Thompson, Fielden.....	Feb. 23, 1886.
			26	Turner, Lell D	" 5, 1884.
			27	Wall, Frank.....	June 21, 1883.
			28	West, Frank	Aug. 2, 1887.
			29	Zwerner, George	Dec. 14, 1886.

Strength of Company, 43.

Co. E—LEVERING GUARD—MT. GILEAD—Organized August 15, 1878.

OFFICERS.

William F. Wieland.....Captain.
M. Filmore Cunard.....1st Lieutenant.
Frank W. Wilson.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Sergeants.			Privates—Continued.		
1	James Litzenburg.....	Apr. 26, 1884.	5	Conners, John.....	May 17, 1884.
2	Lem. R. Mateer.....	Sept. 19, 1883.	6	Dick, Edward J.....	Jan. 6, 1886.
3	John W. Walker.....	June 30, 1885.	7	Early, Budd V.....	July 31, 1885.
4	Fred. Early.....	Mar. 22, 1884.	8	Early, Frank.....	Mar. 1, 1884.
5	Cyrus A. Miller.....	April 20, 1884.	9	Early, Ira.....	July 5, 1886.
Corporals.			10	Fissell, Charles....	June 9, 1886.
1	George J. Young.....	Mar. 22, 1884.	11	Garberson, Fred.....	Aug. 6, 1887.
2	Edward Haskins.....	June 27, 1885.	12	Gaffield, William.....	June 29, 1886.
3	Joseph M. Breese.....	Aug. 6, 1887.	13	Galleher, J. Wm.....	July 29, 1885.
4	Harry Irwin.....	Mar. 1, 1884.	14	Harris, Monroe.....	May 5, 1884.
5	Sanford Early.....	May 17, 1884.	15	Hull, W. Ernest.....	May 4, 1887.
6	Turney Carlisle.....	Sept. 10, 1883.	16	Hildebrand, William..	July 20, 1887.
7	.....	.....	17	Johnson, James W.....	Sept. 18, 1883.
8	.....	.....	18	Jacobs, William.....	Mar. 1, 1884.
Musicians.			19	Livenspire, Lafe.....	Sept. 8, 1883.
1	.....	.....	20	McComb, Bert.....	June 30, 1887.
2	.....	.....	21	McCurdy, William....	"
Wagoner.			22	Pinyerd, Bert.....	May 17, 1884.
1	.....	.....	23	Pinyerd, Elmer.....	June 29, 1886.
2	.....	.....	24	Ream, Emanuel.....	June 9, 1886.
Privates.			25	Rule, H. C.....	Dec. 1, 1886.
1	Brown, Charles.....	Mar. 31, 1886.	26	Skinner, Frank.....	Feb. 10, 1886.
2	Baughman, Frank.....	Sept. 11, 1883.	27	Shaw, Ralph.....	July 20, 1887.
3	Billett, John.....	Aug. 6, 1887.	28	Thomas, Edward J.....	June 9, 1886.
4	Cornwell, J. D.....	May 4, 1887.	29	Thomas, Alec.....	July 5, 1886.
			30	Ullom, Elmer E.....	May 17, 1884.
			31	Ullom, E. S.....	"
			32	Wade, Albert W.....	May 3, 1884.
			33	Wilson, Charles.....	Mar. 10, 1886.
			34	Wrenn, Lincoln Grant.	Mar. 31, 1886.
			35	Watkins, T. Albert.....	June 30, 1887.
			36	Yant, W. Vol.....	May 4, 1887.

Strength of Company, 50.

Co. F—CONVERSE GUARD—COLUMBUS—Organized August 18, 1877.

OFFICERS.

Charles Merion, Jr.....Captain.
John F. McFadden.....1st Lieutenant.
William D. Ranney.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Sergeants.			Corporals.		
1	George Borchers.....	July 20, 1883.	1	William Sayne.....	July 29, 1883.
2	Frank W. Smith.....	Dec. 10, 1884.	2	John F. Karns.....	Aug. 8, 1886.
3	William P. Tracy.....	July 29, 1885.	3	Graham W. Menter....	Apr. 30, 1884.
4	C. W. Kauffman.....	July 15, 1885.	4	Nelson A. Blazier.....	Feb. 13, 1884.
5	George Heimlich.....	May 10, 1883.	5	R. W. Dowdel.....	Feb. 28, 1883.

Co. F—CONVERSE GUARD—COLUMBUS—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
	<i>Corporals—Continued.</i>			<i>Privates—Continued.</i>	
6	Frank E. Ewers.....	Feb. 22, 1887.	15	Grube, Charles.....	Aug. 8, 1886.
7	.....	.....	16	Harrison, John B.....	"
8	.....	.....	17	Hudson, Charles.....	Aug. 2, 1887.
	<i>Musicians.</i>		18	Kline, Charles.....	June 21, 1887.
			19	King, W. E.....	Apr. 29, 1885.
1	Fred. Hamilton.....	Aug. 1, 1884.	20	Lakin, Charles G.....	Apr. 30, 1884.
2	Charles Mulholland....	Aug. 2, 1887.	21	Latham, H. H.....	Aug. 2, 1887.
	<i>Wagoner.</i>		22	McDonald, Walker....	July 29, 1885.
			23	Morrison, Clarence....	Mar. 5, 1884.
1	Charles Clayton.....	July 1, 1885.	24	Mock, John.....	June 21, 1887.
	<i>Privates.</i>		25	Minnick, L. A.....	Sept. 3, 1885.
1	Avery, Nelson.....	Aug. 2, 1887.	26	Marlow, William.....	Aug. 2, 1887.
2	Beach, Charles.....	Apr. 16, 1884.	27	Morris, Edward.....	June 21, 1887.
3	Bradford, C. N.....	Nov. 8, 1883.	28	McVeigh, E. E.....	Apr. 30, 1884.
4	Bevelheimer, George...	Aug. 2, 1887.	29	Niederlander, E. E. ...	July 29, 1885.
5	Borchers, Herman.....	July 20, 1883.	30	Myers, Samuel.....	Nov. 2, 1886.
6	Ballou, Harry A.....	Aug. 2, 1887.	31	O'Shay, James.....	Aug. 2, 1887.
7	Brown, Charles.....	July 29, 1885.	32	Pratt, Lewellyn.....	Nov. 2, 1886.
8	Campbell, V. R.....	Nov. 7, 1883.	33	Sarber, George C.....	Aug. 3, 1886.
9	Collins, Homer.....	Nov. 2, 1886.	34	Smith, John F.....	July 3, 1884.
10	Daymude, Edward.	July 29, 1885.	35	Shanck, Emmett.....	Apr. 1, 1883.
11	Dowdel, Raymond.....	Aug. 2, 1887.	36	Shettel, John R.....	June 7, 1887.
12	Ellis, Arthur.....	Nov. 1, 1884.	37	Steinel, Jacob.....	Aug. 2, 1887.
13	Ehrler, Lawrence.....	Aug. 2, 1887.	38	Tozer, Robert.....	"
14	Fogle, George.....	June 7, 1887.	39	White, John J.....	May 13, 1886.
			40	Walker, Charles.....	Jan. 17, 1883.
			41	Wheeler, James R.....	Aug. 8, 1886.
			42	Williams, V. D.....	July 29, 1885.
			43	Yieser, Charles E.....	Mar. 16, 1883.

Strength of Company, 60.

Co. G—HAMILTON GUARD—RICHWOOD—Organized July 19, 1877.

OFFICERS.

Frank S. McMahon.....Captain.
Willis E. Young.....1st Lieutenant.
.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
	<i>Sergeants.</i>			<i>Musicians.</i>	
1	B. Frank Hostler.....	July 1, 1887.	1	.....	.....
2	Leven Osborn.....	May 1, 1884.	2	.....	.....
3	John Cox.....	July 1, 1887.		<i>Wagoner.</i>	
4	.....	.....	
5	.....	.....	1	.....	.....
	<i>Corporals.</i>			<i>Privates.</i>	
1	Jacob C. Irwin.....	July 1, 1887.	1	Baker, Isaac.....	May 1, 1884.
2	Joseph Snyder.....	" 1, 1884.	2	Baker, William E.....	July 26, 1887.
3	William Snyder.....	May 1, 1883.	3	Barker, Frank.....	Mar. 30, 1887.
4	William Harris.. ..	" 1, 1885.	4	Brown, David.....	July 21, 1885.
5	Lute Young.....	July 27, 1887.	5	Bailey, Winn.....	July 1, 1884.
6	.....	.....	6	Bigley, Frank.....	May 1, 1884.
7	.....	.....	7	Carder, Charles.....	July 26, 1887.
8	.....	.....	

Co. G—HAMILTON GUARD—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Privates—Continued.</i>			<i>Privates—Continued.</i>		
8	Carroll, John E.....	May 1, 1886.	23	More, William	Dec. 1, 1886.
9	Carroll, George.....	May 17, 1887.	24	McMahon, Fred. W	July 26, 1887.
10	Chambers, John.....	July 26, 1887.	25	Perkins, John	" 21, 1886.
11	Cramer, Alva.....	July 1, 1884.	26	Riley, Frank	" 1, 1884.
12	Cox, William.....	Apr. 18, 1887.	27	Robinson, George	" 26, 1887.
13	Darling, Iverson R	June 1, 1883.	28	Severe, William.....	Dec. 1, 1886.
14	Ferrin, Fred.....	Mar. 30, 1887.	29	Scott, William S.....	April 5, 1887.
15	Fisher, C. N	May 1, 1885.	30	Smith, Earl T.....	June 1, 1883.
16	Fisher, Fred. F.....	Mar. 30, 1887.	31	Shackelford, Isaiah	Mar. 30, 1887.
17	Gill, William H	"	32	Shackelford, Jesse A ...	April 5, 1887.
18	Holmes, C. F	May 1, 1884.	33	Snair, Elisha A.....	Dec. 1, 1886.
19	Huston, Charles B.....	July 1, 1884.	34	Tongnet, Larkin J	July 1, 1887.
20	Jacobs, Alzora.....	July 26, 1887.	35	Whitehead, Harry	June 20, 1886.
21	Langstaff, Judson	May 1, 1885.	36	Young, Frank.....	May 1, 1884.
22	Mather, John.....	" 1, 1884.			

Strength of Company, 46.

Co. H—POTTER LIGHT GUARD—CANAL WINCHESTER—Organized March 2, 1878.

OFFICERS.

John C. SpeaksCaptain.
William W. Walters1st Lieutenant.
.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Sergeants.</i>			<i>Privates.</i>		
1	Homer L. Binkley	Mar. 19, 1883.	1	Adams, James S.....	May 21, 1884.
2	Elmer Kramer	Mar. 5, 1883.	2	Bailey, William C.....	Nov. 26, 1883.
3	William S. Tussing	Mar. 19, 1883.	3	Boyer, Daniel G.....	May 23, 1887.
4	Edward Coleman.....	Dec. 31, 1883.	4	Coleman, William.....	April 26, 1886.
5	William S. Gayman.....	Mar. 12, 1883.	5	Delong, W. A	April 5, 1886.
<i>Corporals.</i>			6	Dunlop, Charles.....	April 7, 1887.
1	Oliver P. Dunlop	Jan. 14, 1884.	7	Evans, Charles	May 12, 1883.
2	George W. Tovill.....	May 5, 1886.	8	Glick, David H	July 1, 1884.
3	Samuel Travis.....	Mar. 5, 1883.	9	Hische, Charles.....	Mar. 19, 1883.
4	James A. McKelvey.....	Mar. 1, 1886.	10	Hische, Frank.....	Mar. 12, 1883.
5	Marion Washburn	Mar. 25, 1883.	11	Justice, Harry.....	July 21, 1886.
6	.....	.....	12	Komp, William	Jan. 14, 1884.
7	.....	.....	13	Lecrone, Charles	Apr. 25, 1887.
8	.....	.....	14	Moss, Edward.....	May 24, 1886.
<i>Musicians.</i>			15	Miller, Milton.....	July 19, 1886.
1	George E. McKelvey ...	July 19, 1886.	16	Roberts, James.....	Mar. 5, 1883.
2	.....	.....	17	Rowe, Louis.....	July 21, 1886.
<i>Wagoner.</i>			18	Speaks, William.....	Mar. 5, 1883.
1	.....	.....	19	Slack, Daniel	Feb. 15, 1886.
			20	Shortt, Charles E.....	Apr. 12, 1886.
			21	Slough, Charles	July 6, 1885.
			22	Werner, Charles.....	Mar. 3, 1884.
			23	Walters, Amos	" 5, 1883.
			24	Will, Daniel.....	Apr. 11, 1887.
			25	Yost, George	Mar. 19, 1883.
			26	Zahn, John.....	Apr. 19, 1883.

Strength of Company, 39.

Co. I—MOUNT PLEASANT GUARD—LANCASTER—Organized May 24, 1881.

OFFICERS.

Albert Getz.....Captain.
William Walker.....1st Lieutenant.
Clarence M. Cromley.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Sergeants.			Privates—Continued.		
1	Louis Palmer.....	May 15, 1883.	10	Denton, Frank.....	May 15, 1887.
2	Chancey Black.....	May 2, 1887.	11	Ensley, Colson.....	May 24, 1886.
3	Elmer Rugh.....	"	12	Frank, Carl	"
4	William Wright.....	June 6, 1887.	13	Foreman, Andrew.....	June 1, 1887.
5	John W. Miller.....	July 13, 1886.	14	Groff, Ellsworth.....	" 26, 1883.
Corporals.			15	Hamock, Samuel.....	May 15, 1883.
1	John Hamock.....	June 22, 1886.	16	Harrman, Washington	May 17, 1884.
2	Charles Meyers.....	Jan. 18, 1884.	17	Hunter, Ernest.....	July 5, 1883.
3	George Shrink.....	Oct. 4, 1886.	18	Holland, John.....	July 14, 1886.
4	William Rodgers.....	June 1, 1886.	19	Johnson, Leonard.....	May 24, 1886.
5	.....	.....	20	Keister, Samuel.....	"
6	.....	.....	21	Keiger, Samuel.....	April 5, 1887.
7	.....	.....	22	Lutz, William.....	Dec. 18, 1883.
8	.....	.....	23	Miller, Edward.....	Aug. 11, 1885.
Musicians.			24	Meyer, Franklin.....	May 5, 1885.
1	Henry Bowman.....	June 22, 1886.	25	Morton, William.....	Aug. 11, 1883.
2	.....	.....	26	Moyer, Alva.....	June 6, 1887.
Wagoner.			27	Meyers, Henry W	May 24, 1886.
1	.....	.....	28	Neff, Charles.....	June 1, 1886.
Privates.			29	Raborn, Allen.....	May 17, 1887.
1	Boherer, David L.....	May 2, 1882.	30	Raborn, John.....	Apr. 19, 1887.
2	Bope, George W.....	May 24, 1886.	31	Stokes, Michael.	Feb. 19, 1884.
3	Broyles, U. G.....	Mar. 3, 1885.	32	Shumaker, Jacob.....	Aug. 11, 1883.
4	Barnes, Wesley.....	Mar. 15, 1887.	33	Smith, John.....	May 24, 1886.
5	Coffman, William.....	May 24, 1886.	34	Smith, Charles	"
6	Christ, John F.....	"	35	Schleck, George.....	Apr. 15, 1884.
7	Craiglow, Thomas	"	36	Shaw, Solomon.....	July 5, 1883.
8	Callahan, Edson.....	June 1, 1886.	37	Stout, Isaac.....	Jan. 4, 1887.
9	Douglass, Moses.....	June 26, 1883.	38	Spirkey, Charles.....	Mar 15, 1887.
			39	Sain, Ralieg.....	June 6, 1887.
			40	Timmos, Tonney.....	June 21, 1887.
			41	Wright, James.....	July 5, 1883.
			42	Weaver, Jacob H.....	May 7, 1886.
			43	Watts, Andrew.....	May 24, 1886.
			44	Woodring, William....	June 14, 1886.
			45	Walt, Joseph	Mar. 15, 1887.

Strength of Company, 58.

Co. K—JOY GUARD—DELAWARE—Organized February 13, 1879.

OFFICERS.

C. Barton Adams..... Captain.
F. M. Bauereis... 1st Lieutenant.
Ralph H. Van Deman..... 2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Sergeants.			Privates—Continued.		
1	Edward J. Montaine...	Feb. 26, 1885.	3	Breece, Henry L	May 10, 1887.
2	Ells C. Graff.....	Mar. 24, 1883.	4	Brittain, James A.....	May 21, 1885.
3	James S. Dike.....	Feb. 13, 1884.	5	Brown, Matthias G	Aug. 6, 1887.
4	Harry L. Clark.....	Apr. 13, 1883.	6	Banker, Melvin A.....	"
5	Edwin F. Adams.....	Mar. 27, 1883.	7	Chubb, Robert H.....	Mar. 8, 1887.
Corporals.			8	Case, Albert F.....	Apr. 26, 1887.
1	Will F. Dodge.....	April 3, 1883.	9	Darrah, James A....	Feb. 19, 1884.
2	John W. Heinburger...	"	10	Fisher, Corbin B.....	May 31, 1887.
3	Charles S. Anderson ...	Feb. 19, 1884.	11	Havins, Grant.....	Mar. 30, 1886.
4	Mont. W. Diven.....	Mar. 13, 1885.	12	Jones, Correa E.....	Oct. 13, 1885.
5	Edward M. Semans....	Apr. 15, 1884.	13	Kirzle, Charles.....	June 4, 1886.
6	W. Grant Sanger.....	Feb. 26, 1884.	14	McElroy, Frank H....	Mar. 15, 1887.
7	Elias E. Elliott.....	Oct. 13, 1885.	15	Needles, Archibald C..	July 13, 1886.
8	.....	.....	16	Stevens, H. Virgil.....	Mar. 4, 1884.
Musicians.			17	Stevens, A. Howard....	Sept. 11, 1883.
1	Clarence S. Cochran....	Apr. 13, 1886.	18	Selover, James R.....	June 9, 1885.
2	Charles U. Ullery.....	Feb. 26, 1884.	19	Sackett, Frank E.....	June 30, 1884.
Wagoner.			20	Smith, Orrie P.....	Feb. 19, 1884.
1	.....	.....	21	Sperling, James L.....	June 3, 1886.
Privates.			22	Schaffner, Jacob M.....	Oct. 26, 1886.
1	Allen, Henry.....	Nov. 23, 1886.	23	Scott, Clyde.....	Sept. 23, 1886.
2	Armstrong, Will H....	July 5, 1887.	24	Taylor, Alonzo W.....	Dec. 1, 1885.
			25	Palmer, Robert S.....	June 7, 1887.
			26	Vergon, John G.....	Feb. 26, 1884.
			27	Warren, Will M.....	May 7, 1886.
			28	Wachter, Will W.....	Mar. 29, 1884.
			29	Wells, Frank G.....	Apr. 6, 1884.
			30	Wallace, James E.....	Jan. 12, 1886.
			31	Wallace, John C.....	Jan. 5, 1886.
			32	Watkins, Charles T.....	June 10, 1884.

Strength of Company, 49.

Co. L—GOVERNOR'S GUARD GATLING GUN Co.—COLUMBUS—Organized August 8, 1877.

OFFICERS.

Will W. Homes..... Captain.
James M. Broucher..... 1st Lieutenant.
Emery A. Everett..... 2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Sergeants.			Corporals.		
1	Alexander E. Clark.....	May 5, 1885.	1	Lawrence A. Irwin.....	Aug. 8, 1887.
2	Louis E. Brown	"	2	John McNamee	"
3	Frank H. Peck.....	Aug. 8, 1887.	3	James G. Shepard.....	Aug. 1, 1887.
4	Michael Ryan.....	Aug. 18, 1887.	4	Herbert Knopf.....	Aug. 8, 1887.
5	.....	.....	5	Charles Baker	Aug. 1, 1887.

Co. L—GOVERNOR’S GUARD GATLING GUN Co.—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Corporals—Continued.</i>			<i>Privates—Continued.</i>		
6	Arthur E. Surguy.....	Apr. 7, 1884.	15	Howard, Otto N.....	Oct. 17, 1887.
7	John Mulcay.....	Aug. 8, 1887.	16	Ijams, Harry	Aug. 1, 1887.
8	.....	.....	17	Jackson, Geo.....	July 14, 1885.
<i>Musicians.</i>			18	Jacobs, Carlos G.....	Aug. 1, 1887.
			19	Keagle, Geo. H.....	"
1	James Bell	Aug. 8, 1887.	20	Keller, Clarence E	Aug. 18, 1887.
2	Frank L. Knox.....	"	21	Kirchherr, Jac. F.....	Aug. 8, 1887.
<i>Wagoner.</i>			22	Koehler, Chas. H.....	Aug. 18, 1887.
			23	Leibfarth, Theo	Aug. 1, 1887.
1	.....	.....	24	Mason, John	Aug. 8, 1887.
<i>Privates.</i>			25	McCauley, Edward.....	July 14, 1885.
1	Bancroft, Jas. F.....	Aug. 4, 1884.	26	McCormick, Logan.....	Oct. 17, 1887.
2	Booth, S. P.....	Aug. 4, 1887.	27	McKinley, Edmund W	Aug. 1, 1887.
3	Brown, Chas. F	Aug. 1, 1887.	28	Moling, Geo. W	Aug. 8, 1887.
4	Burnham, L. C... ..	Oct. 17, 1887.	29	Morford, Russell B	Aug. 1, 1887.
5	Caldwell, N. Harte.....	June 25, 1883.	30	Mountz, Jos.....	Sept. 1, 1884.
6	Caylor, C. S	Aug. 8, 1887.	31	Murphy, Martin.....	July 4, 1885.
7	Chapman, Arthur.....	Aug. 1, 1887.	32	O'Brien, Thos	Sept. 15, 1884.
8	Caughlin, Will C.....	"	33	Parker, Frank W.....	Oct. 1, 1887.
9	Cornell, Harry	"	34	Pierce, Simon.....	July 14, 1885.
10	Coulter, Ernest K	Aug. 8, 1887.	35	Sample, Edward C	Aug. 8, 1887.
11	Fields, Wm	Aug. 1, 1887.	36	Shawhan, Wm	"
12	Hale, John E.....	Sept. 4, 1883.	37	Sleffel, Fred	"
13	Hartmus, Chas.....	Aug. 8, 1887.	38	Taylor, Charles L	"
14	Hedge, W	"	39	Taylor, Harry M.	June 15, 1887.
			40	Trent, Jos	Aug. 1, 1887.
			41	Volk, Jas. E	Aug. 8, 1887.
			42	White, David S.....	Oct. 17, 1887.
			43	Young, Wm. H.....	Sept. 15, 1886.

Strength of Company, 59.

SIXTEENTH REGIMENT OF INFANTRY.

FIELD AND STAFF OFFICERS.

Charles M. Keyes.....	Colonel.
Henry S. Bunker	Lieut.-Colonel.
Maurice B. Lemmon.....	Major.
.....	Major.
.....	Adjutant.
Thomas M. Sloane.....	Quartermaster.
Arthur L. Osborne	Surgeon.
.....	Asst. Surgeon.
Patrick S. Slevin....	Chaplain.

Non-Commissioned Staff and Band, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
	<i>Sergeant-Major.</i>			<i>Leader.</i>	
1	Frank W. Rickenbaugh	July 3, 1887.	1	B. M. Myers.....	Aug. 7, 1883.
	<i>Quartermaster-Sergeant.</i>			<i>Musicians.</i>	
1	.....	.....	1	Aming, Sebastian.....	June 1, 1887.
	<i>Commissary-Sergeant.</i>		2	Allenbach, Theo.....	Aug. 13, 1883.
1	Henry Matern	Aug. 10, 1887.	3	Brindle, Cyrus	June 1, 1887.
	<i>Hospital Steward.</i>		4	Dildine, A. R.....	Aug. 3, 1883.
1	William M. Melville...	May 31, 1883.	5	Dolke, Wm. F.....	June 1, 1887.
	<i>Principal Musicians.</i>		6	Hamm, John.....	"
1	.....	.....	7	Hamm, Henry H	"
2	.....	.....	8	Hunt, Henry T.....	"
	<i>Drum Major.</i>		9	Hernlein, Frank J	"
1	William Kay.....	Apr. 28, 1887.	10	Linhart, John H	"
			11	Myers, Park L	Aug. 7, 1883.
			12	McFadden, J. A.....	June 1, 1887.
			13	Schaufalberger, Chas...	Aug. 7, 1883.
			14	Schaufalberger, Eustes	"
			15	Schaufalberger, Frank	"
			16	Shordel, Lewis U.....	June 1, 1887.
			17	Schlembach, John.....	"
			18	Schutzer, W. E.....	"
			19	Weisenburger, J. S.....	"
			20	Widmer, Al.....	Aug. 1, 1887.
			21	Wrede, H. H	"

Strength of Field, Staff and Band, 32.

Co. A—WALBRIDGE LIGHT GUARD—TOLEDO—Organized November 1, 1872.

OFFICERS.

Jacob M. Weier.....	Captain.
Mortimer F. Gilmore	1st Lieutenant.
Edward W. Rydman.....	2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
	<i>Sergeants.</i>			<i>Corporals.</i>	
1	Frank C. Roshong.....	Nov. 25, 1885.	1	Samuel J. Neiding	June 25, 1883.
2	Alex. Young	Aug. 21, 1885.	2	Simon L. Gullerd	April 7, 1884.
3	Jacob S. Schick... ..	Sept. 3, 1883.	3	Charles Saco.....	July 16, 1883.
4	William H. Steele	July 16, 1883.	4	Ad. W. Schladdetsch...	Mar. 23, 1885.
5	Chester F. Baldwin.....	Sept. 15, 1883.	5	Joshua L. Taylor	Jan. 25, 1885.

Co. A—WALBRIDGE LIGHT GUARD—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
	<i>Corporals—Continued.</i>			<i>Privates—Continued.</i>	
6	Hugh J. Bartley.....	Sept. 17, 1883.	9	Cosgrove, Taylor T.....	Oct. 18, 1886.
7	.....	.....	10	Dalles, Mack	July 16, 1887.
8	.....	.....	11	Emery, Charles S	Aug. 7, 1886.
	<i>Musicians.</i>		12	Emery, Edwin W	Oct. 18, 1886.
	.....	.....	13	Eaton, James J.....	Feb. 16, 1885.
1	.....	.....	14	Eagin, Fred.....	June 29, 1885.
2	.....	.....	15	Hahn, Charles F. C.....	June 16, 1884.
	<i>Wagoner.</i>		16	Hancock, Harley H	June 29, 1884.
	.....	.....	17	Hanlin, John M.	June 23, 1886.
1	.....	.....	18	Harrison, William H...	July 16, 1887.
	<i>Privates.</i>		19	Hoehler, George.....	Apr. 7, 1884.
1	Ahrents, Edward H.....	July 19, 1886.	20	Lanfraw, Charles S.....	June 29, 1884.
2	Bailey, Daniel R.....	July 16, 1887.	21	Lawler, Richard.....	Apr. 28, 1884.
3	Bondrie, Frank	May 16, 1887.	22	Lutz, Henry..	Jan. 17, 1887.
4	Brown, Fred. A	Aug. 17, 1885.	23	Metzer, Louis L	"
5	Bockholtz, Albert J	July 16, 1887.	24	More, Frank	July 16, 1887.
6	Bunde, William D.	Aug. 19, 1885.	25	Neipp, Herman	July 26, 1886.
7	Byers, Howard.....	July 6, 1885.	26	Poule, Frank S.....	Feb. 19, 1886.
8	Conrad, John B	June 29, 1885.	27	Prouty, Bert	June 29, 1885.
			28	Schladdetsch, Magnus..	Dec. 21, 1885.
			29	Stock, Fred	Mar. 21, 1887.
			30	Zurflich, Fred. H.....	Sept. 19, 1887.

Strength of Company, 44.

Co. B—SANDUSKY LIGHT GUARD—SANDUSKY—Organized May 3, 1875.

OFFICERS.

Edmund B. KingCaptain.
Geo. P. Barker.....1st Lieutenant.
William L. Lewis2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
	<i>Sergeants.</i>			<i>Wagoner.</i>	
1	Wm. R. Zollinger	June 9, 1885.	1	.....	.....
2	Chas. Lehrer	Sept. 1, 1883.		<i>Privates.</i>	
3	A. L. Clarke.....	June 20, 1883.		.....	.....
4	Louis Szendery	Sept. 1, 1883.	1	Arndt, Chas. H.....	Aug. 19, 1885.
5	Clarence D. Peck	Aug. 2, 1887.	2	Biehl, J. L.	May 10, 1886.
	<i>Corporals.</i>		3	Boor, Grant	Oct. 26, 1885.
1	John W. Upp.....	Apr. 1, 1883.	4	Bloker, E. F.....	Dec. 11, 1885.
2	D. J. Mackey.....	July 1, 1884.	5	Butts, John H.....	July 11, 1885.
3	Frank S. Zollinger	Sept. 1, 1883.	6	Close, Henry J	May 10, 1886.
4	Norman T. Smith	Aug. 17, 1885.	7	Ferris, W. S	July 1, 1884.
5	John R. Affleck	June 30, 1885.	8	Horne, Chas. F., Jr	Aug. 3, 1883.
6	Clin. B. Wilcox	Aug. 17, 1885.	9	Klotz, August	Aug. 17, 1885.
7	Allen T. Whitney ..	June 30, 1885.	10	Love, Maro J	Nov. 1, 1883.
8	.....	.....	11	Lea, D. P	July 11, 1887.
	<i>Musicians.</i>		12	Muencher, C. H	June 14, 1886.
1	A. J. Peters	Aug. 1, 1886.	13	Muencher, P. C.....	Mar. 14, 1887.
2	.....	.....	14	Meredith, R. L	Sept. 1, 1883.
			15	Meens, Charles H	June 28, 1886.
			16	Molitor, W. F	Feb. 7, 1887.
			17	McCormick, M ..	"

Co. B—SANDUSKY LIGHT GUARD—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Privates—Continued.</i>			<i>Privates—Continued.</i>		
18	Marshall, N. E	Oct. 3, 1887.	25	Strobel, G	June 23, 1886.
19	Nusly, Sam'l C.....	May 10, 1886.	26	Tessier, J. E.....	June 2, 1887.
20	Platt, Edward.....	Oct. 15, 1885.	27	Williams, A	July 15, 1883.
21	Ransom, Ross L.....	June 30, 1885.	28	Williams, Geo. C	May 25, 1887.
22	Rhode, C. J.....	July 2, 1887.	29	Windisch, George	Dec. 11, 1885.
23	Rogers, O. J.	"	30	Wales, C. W.....	Mar. 27, 1887.
24	Strober, Chas.....	Aug. 17, 1885.			

Strength of Company, 46.

Co. C—TOLEDO GRAYS—TOLEDO—Organized March 15, 1876.

OFFICERS.

James R. Wade. Captain.
 William H. Moore.....1st Lieutenant.
 Charles O. Phelps.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Sergeants.</i>			<i>Privates—Continued.</i>		
1	John H. Christen.....	May 15, 1883.	8	Brigham, Geo H.....	June 7, 1887.
2	Elwood B. Squire	Mar. 30, 1885.	9	Cherry, Geo. A	Oct. 1, 1886.
3	John R. Longshore	June 29, 1885.	10	Deball, Herman	Sept. 23, 1883.
4	Joseph Shinaver	Aug. 7, 1883.	11	Diefenbach, Charles.....	June 2, 1886.
5	Edward Swinhart.....	July 10, 1883.	12	Deno, Frank	Aug. 4, 1886.
<i>Corporals.</i>			13	Dallas, Joseph.....	Aug. 11, 1886.
1	John J. Diefenbach.....	Nov. 9, 1885.	14	Donohue, Dennis P.....	June 1, 1887.
2	Arthur M. Odell.....	Nov. 3, 1885.	15	Debth, Samuel	Aug. 24, 1887.
3	Clayton Craley	Aug. 5, 1884.	16	Ebert, Henry.....	June 30, 1886.
4	John Meek.....	Mar. 17, 1886.	17	Ellis, John A.....	" 22, 1887.
5	Edward R. Smiley	Mar. 30, 1887.	18	Flack, Charles.	Dec. 8, 1886.
6	Elry S. Consul.....	Mar. 2, 1883.	19	Geisert, Geo. O	Aug. 7, 1883.
7	Theodore Keck.....	July 10, 1883.	20	Gable, John F.....	Dec. 9, 1885.
8	Louis Becker.....	Apr. 24, 1883.	21	Gardner, Robert S.....	Aug. 31, 1887.
<i>Musicians.</i>			22	Hill, Albert S.....	" 7, 1883.
1	Jerry D. Miller.....	Sept. 21, 1887.	23	Howe, William H.....	June 29, 1887.
2	.....	.....	24	Kagle, August.....	June 29, 1886.
<i>Wagoner.</i>			25	King, Charles A.....	Oct. 12, 1887.
1	.....	.....	26	Mason, Geo. M	July 17, 1883.
<i>Privates.</i>			27	Medford, Edward G.....	Dec. 14, 1885.
1	Altman, Joseph	Oct. 12, 1887.	28	Morgan, Fred. G	Aug. 24, 1887.
2	Baker, Frank N	Dec. 17, 1884.	29	Pflock, Frank	Dec. 15, 1886.
3	Braker, Joseph H	June 16, 1886.	30	Rector, Frank.....	Nov. 17, 1884.
4	Bender, Chas. H.....	Oct. 1, 1886.	31	Rafter, Thomas.....	Dec. 7, 1885.
5	Bracht, Henry J.....	Feb. 16, 1887.	32	Schuebelen, Paul.....	June 15, 1887.
6	Bitz, Henry J.....	June 1, 1887.	33	Schillinger, Gustave.....	June 30, 1886.
7	Barker, Clarence J	June 7, 1887.	34	Sexton, Emmet O.....	Aug. 24, 1887.
			35	Trotter, William L.....	Mar. 30, 1887.
			36	Thomas, Phillip.....	June 7, 1887.
			37	Vannetten, Charles... ..	Nov. 17, 1884.
			38	Wells, George	Feb. 26, 1884.
			39	Wadock, William H.....	Dec. 7, 1885.
			40	Wagenknecht, Louis...	Oct. 1, 1886.
			41	Waidler, Ernst C.....	June 29, 1887.

Strength of Company, 58.

Co. D—FOSTER LIGHT GUARD—FOSTORIA—Organized July 6, 1877.

OFFICERS.

William O. Bulger.....Captain.
Jacob Krieger.....1st Lieutenant.
William G. Klinepeter.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Sergeants.			Sergeants—Continued.		
1	Bert Jones.....	Apr. 23, 1884.	4	Blinn, Allen H.....	July 28, 1886.
2	Scott McConnell.....	June 20, 1885.	5	Bowen, Henry H.....	May 14, 1887.
3	Franklin P. Culp.....	May 7, 1884.	6	Benham, Bruce B.....	Mar. 16, 1887.
4	Richard W. Hessey.....	July 21, 1883.	7	Brooks, Charles R.....	Aug. 2, 1883.
5	Allen B. Stutter.....	June 1, 1885.	8	Clark, Albert.....	June 30, 1886.
Corporals.			9	Denny, John H.....	May 5, 1886.
1	David E. Culp.....	Mar. 5, 1886.	10	Evey, Charles.....	July 13, 1887.
2	Wm. H. McLaughlin...	Apr. 9, 1884.	11	Gardiner, Solomon.....	May 27, 1887.
3	Thomas J. Hessey.....	May 5, 1883.	12	Goodman, James.....	May 11, 1887.
4	Richard Ditto.....	May 28, 1884.	13	Inghart, Louis A.....	May 16, 1887.
5	Elmer E. Dole.....	Apr. 30, 1884.	14	Kipka, Otto.....	"
6	.....	.....	15	Lyons, James.....	July 28, 1886.
7	.....	.....	16	Lowe, E. Brown.....	May 16, 1887.
8	.....	.....	17	McCullick, Walter.....	May 16, 1886.
Musicians.			18	McLaughlin, Phillip ..	May 16, 1887.
1	William A. Lovette.....	Apr. 9, 1884.	19	McLaughlin, Lewis.....	May 11, 1887.
2	Frank Whitlock.....	May 4, 1887.	20	Preble, Marshall.....	May 5, 1886.
Wagoner.			21	Pence, James T.....	Mar. 16, 1887.
1	.....	.....	22	Runyan, Charles A.....	May 28, 1884.
Privates.			23	Ruse, Robert.....	June 2, 1886.
1	Bowman, Hiram.....	July 30, 1884.	24	Rodecker, William J...	May 11, 1887.
2	Bonnell, Joshua.....	Feb. 18, 1885.	25	Reynolds, Abner A.....	May 24, 1887.
3	Bonnell, Jesse W.....	"	26	Rober, William.....	June 24, 1887.
			27	Richards, George C.....	July 28, 1886.
			28	Rice, Allen.....	Mar. 16, 1887.
			29	Sweet, Benjamin F.....	Mar. 16, 1884.
			30	Troutman, Frank.....	June 2, 1886.
			31	Woesner, Frank.....	"
			32	Wallace, John A.....	"
			33	Wollenberg, John M...	June 7, 1886.
			34	Wallace, Jacob.....	May 11, 1887.

Strength of Company, 49.

Co. E—BRYAN LIGHT GUARD—BRYAN—Organized July 6, 1877.

OFFICERS.

Cyrus H. Dillman.....Captain.
W. M. Boothman.....1st Lieutenant.
John W. Hitt.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Sergeants.			Corporals.		
1	John A. Smith.....	Mar. 26, 1884.	1	C. E. McGlenen.....	June 21, 1883.
2	W. M. Crawford.....	"	2	J. S. Lanby.....	July 3, 1885.
3	George H. Diehl.....	"	3	Lee W. Smith.....	Feb. 26, 1885.
4	Chas. Langst.....	June 7, 1884.	4	W. W. Grass.....	July 1, 1886.
5	W. S. Taylor.....	June 21, 1883.	5	Lee Simmons.....	April 8, 1886.

Co. E—BRYAN LIGHT GUARD--Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
	<i>Corporals—Continued.</i>			<i>Privates—Continued.</i>	
6	Joseph P. Leavy	Feb. 2, 1886.	5	Freeman, Geo. W	July 3, 1885.
7	James Hodkins.....	July 3, 1885.	6	Gillett, Marion	July 9, 1883.
8	James P. Sloat	July 12, 1886.	7	Hilliard, Joseph.....	June 28, 1883.
	<i>Musicians.</i>		8	Klopfenstein, F. J.....	Feb. 24, 1887.
			9	Leichty, Henry.....	June 12, 1884.
1	Curtis E. Miller ..	July 15, 1886.	10	Mattox, Elmer	Feb. 24, 1887.
2	.....	.....	11	Newman, Wm.....	Aug. 25, 1886.
	<i>Wagoner.</i>		12	Neff, William	July 9, 1883.
			13	Plummer, Walter	July 1, 1887.
1	.....	.....	14	Preston, Bert. H	Aug. 14, 1885.
	<i>Privates.</i>		15	Richard, Samuel	June 13, 1884.
			16	Ritchey, Wm.....	Feb. 24, 1887.
1	Bowen, Chas. E.....	Feb. 2, 1886.	17	Rodgikite, M. H.....	July 2, 1886.
2	Calvin, Marvin C.....	July 1, 1887.	18	Rolsel, Wm	Mar. 4, 1887.
3	Coleman, Harvey	"	19	Schartzer, W. M.....	Feb. 24, 1887.
4	Dubois, George	Feb. 24, 1887.	20	Spicer, F. B.....	July 14, 1886.
			21	Straight, Albert L.	July 24, 1884.
			22	Wirich, Charles	July 1, 1887.
			23	Wirich, William	Feb. 24, 1887.

Strength of Company, 40.

Co. F—NAPOLEON LIGHT GUARD—NAPOLEON—Organized July 19, 1877.

OFFICERS.

Chas. E. Reynolds.....Captain.
Frank W. Reiter.....1st Lieutenant.
Allison E. Augenstine2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
	<i>Sergeants.</i>			<i>Wagoner.</i>	
1	Wm. L. Fouke	June 12, 1886.	1	.....	.....
2	.....	.....		<i>Privates.</i>	
3	.....	.....	
4	Chas. H. Suydam	Apr. 16, 1883.	1	Allen, Edmund	July 16, 1887.
5	Wm. N. Hess.....	Aug. 11, 1887.	2	Baum, Wm. F.....	Mar. 19, 1883.
	<i>Corporals.</i>		3	Blackman, Jos	May 26, 1887.
			4	Babcock, Elmer	Oct. 15, 1887.
1	.....	.....	5	Cramer, John W	June 14, 1886.
2	Wm Hudson	Jan. 19, 1883.	6	Davenport, Horace	Feb. 11, 1887.
3	Whitney O. Hudson....	" 11, 1883.	7	Douglas, W. B.....	Mar. 5, 1886.
4	James N. Putt.....	Apr. 25, 1884.	8	Emery, Harvey R....	Dec. 25, 1884.
5	Wm. W. Lemert	April 5, 1884.	9	Evers, John C	July 16, 1887.
6	Joseph Kopp	Feb. 13, 1883.	10	Fisk, Frost F.....	May 19, 1887.
7	Julius B. Bernstein.....	June 25, 1887.	11	Foust, Frank.....	July 13, 1885.
8	Joseph A. Musser	July 13, 1885.	12	Fouke, Harry B.....	July 16, 1887.
	<i>Musicians.</i>		13	Frease, Chas. C.....	" 20, 1886.
			14	Fate, Wm	Apr. 29, 1886.
1	Chas. W. Jackson	May 14, 1886.	15	Fellers, Levi B	Mar. 24, 1887.
2	.....	.....	16	Grim, Elmer E.....	" 31, 1887.
			17	Gardner, Geo. D.....	Apr. 17, 1884.

Co. F—NAPOLEON LIGHT GUARD—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Privates—Continued.			Privates—Continued.		
18	Gardner, Jos. D.....	June 5, 1885.	30	Palmer, A. S	June 18, 1887.
19	Green, Taylor	July 16, 1887.	31	Reiger, Geo.....	Apr. 23, 1886.
20	Hague, Harry C.....	Mar. 14, 1887.	32	Reiger, Wm	Apr. 29, 1886.
21	Haynes, Geo.....	Jan. 11, 1884.	33	Scherer, John	"
22	Horn, Richard	Apr. 14, 1884.	34	Shumaker, Wm. F	June 30, 1887.
23	Ingle, Ernest	June 5, 1885.	35	Shumaker, Harley L...	July 11, 1887.
24	Jones, Walter W	May 12, 1887.	36	Smith, Wm. C.....	Aug. 9, 1886.
25	Klimben, W. A.....	July 16, 1887.	37	Thompson, A. F.....	June 30, 1887.
26	Musser, J. E.....	July 5, 1883.	38	Warner, Daniel.....	Apr. 29, 1886.
27	Meekison, M. V	Dec. 25, 1884.	39	Wise, Henry	"
28	Putt, E. L	May 1, 1885.	40	Weinland, E. F.....	Apr. 18, 1884.
29	Plummer, Chas.....	Jan. 15, 1885.	41	Waite, Wm.....	May 3, 1884.

Strength of Company, 55.

Co. H—MILBURN GUARD—TOLEDO—Organized August 15, 1877.

OFFICERS.

A. Romeyn Rogers.....Captain.
Samuel F. Tanner.....1st Lieutenant.
Carl H. Beckham.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Sergeants.			Privates—Continued.		
1	John W. Clark.....	July 11, 1883.	6	Christ, Leonard.....	June 27, 1886.
2	Oren McDougal.	Apr. 15, 1886.	7	Clipstine, Louis.....	May 11, 1886.
3	Henry A. Werdehoff..	June 27, 1883.	8	Eble, Frank	May 12, 1887.
4	Frederick Smith.....	Mar. 11, 1883.	9	Fletcher, William H...	May 20, 1887.
5	A. Jay Becker.....	"	10	Ford, Dennis.....	Mar. 11, 1886.
Corporals.			11	Graham, John.....	Mar. 19, 1884.
1	Alpheus Chapman.....	July 11, 1883.	12	Graham, Martin.....	June 24, 1886.
2	Robert Brower	Feb. 6, 1884.	13	Gardner, John A	June 16, 1887.
3	Scott A. Ross	Mar. 11, 1886.	14	Huber, Frank.....	June 27, 1886.
4	Wm. H. Barringer.....	April 21, 1887.	15	Hamlyn, John.....	May 12, 1887.
5	Frederick W. Riddle..	May 27, 1887.	16	Kolling, Frederick.....	June 27, 1886.
6	Nathan Cone.....	April 4, 1884.	17	Kolling, John.....	Mar. 11, 1886.
7	.....	.....	18	Kirk, Frank R	June 17, 1886.
8	.....	.....	19	Litchfield, Orson.....	Mar. 11, 1886.
Musicians.			20	Loeber, Edwin O.....	Apr. 21, 1887.
1	.....	.....	21	McCreary, James M....	June 4, 1884.
2	.....	.....	22	Moon, Charles. ...	Mar. 11, 1886.
Wagoner.			23	Nichols, Thomas.....	Dec. 16, 1885.
1	Oscar Cox.....	July 2, 1887.	24	Newton, Robert.....	June 4, 1884.
Privates.			25	Page, William E.....	Aug. 6, 1886.
1	Burns, Frank.....	Mar. 11, 1886.	26	Pierce, Charles H.....	June 10, 1886.
2	Bowers, Andrew A.....	"	27	Rogers, A. Carle.....	Apr. 21, 1886.
3	Bettis, William C.....	"	28	Rogers, S. Claude.....	Oct. 6, 1886.
4	Birkenhauer, Henry L.	Apr. 21, 1887.	29	Somers, William H.....	Apr. 21, 1887.
5	Becker, John A.....	"	30	Shatto, Henry J.....	Mar. 18, 1886.
			31	Sabin, Warren B.....	June 10, 1886.
			32	Schultz, John.....	Mar. 11, 1886.
			33	Valequette, Isidore.....	Jan. 17, 1886.
			34	Waldvogle, Martin.....	July 20, 1883.
			35	Werdehoff, John.....	Nov. 7, 1883.
			36	White, William.....	Apr. 21, 1887.
			37	Webb, James I.....	June 10, 1886.

Strength of Company, 52

Co. I—McPHERSON GUARD—CLYDE—Organized August 15, 1878.

OFFICERS.

Allen G. Winnie.....Captain.
Afred W. Wiles.....1st Lieutenant.
Le Roy N. Brown.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Sergeants.			Privates—Continued.		
1	William E. Gillett.....	June 13, 1884.	5	Craig, George B.....	Aug. 4, 1883.
2	Albert Bonam.....	Aug. 13, 1885.	6	Crockett, A. B.....	July 1, 1884.
3	Frederick Paden.....	May 7, 1885.	7	Cushion, Oscar J.....	Nov. 23, 1885.
4	.....	.....	8	Daniels, Wesley B.....	May 17, 1887.
5	.....	.....	9	Douglass, Jesse A.	Aug. 18, 1885.
Corporals.			10	Francis, Sherman C....	Mar. 8, 1887.
1	Chris. Krebs.....	June 7, 1886.	11	Giddings, Fred. E.....	Feb. 12, 1885.
2	Albert Cowell.....	Mar. 6, 1884.	12	Gillett, Welby H.....	June 5, 1884.
3	Burt Rathbun... ..	Aug. 4, 1883.	13	Heslett, Will..... ..	Aug. 4, 1883.
4	Aaron D. Collier.....	May 26, 1884.	14	Hoffinan, Edward.....	June 7, 1886.
5	.....	.....	15	Huntley, Alton.	"
6	.....	.....	16	Jeffrey, John.....	Mar. 29, 1887.
7	.....	.....	17	Killinger, John G.....	Dec. 20, 1886.
8	.....	.....	18	Krebs, William.....	May 23, 1887.
Musicians.			19	Leach, Zenos E.	Aug. 9, 1886.
1	Frank West	Aug. 7, 1886.	20	Mack, Frank.....	May 7, 1885.
2	.....	.....	21	Malcolm, M. J.....	Aug. 15, 1883.
Wagoner.			22	McCleary, Morton.....	June 28, 1886.
1	.....	.....	23	Meek, Elmer E.....	Aug. 4, 1883.
Privates.			24	Moffatt, Thorne C.....	July 5, 1887.
1	Baker, Charles.....	July 2, 1886.	25	Peterson, Albert.....	Mar. 29, 1887.
2	Ballard, W. F..... ..	June 7, 1886.	26	Rathbun, Sumner.....	July 29, 1886.
3	Carr, James.....	July 16, 1886.	27	Scott, Frank C.....	May 23, 1887.
4	Chapman, D. H.....	Aug. 7, 1884.	28	Shorts, Charles.....	June 14, 1887.
			29	Smith, Ernest J.....	June 30, 1884.
			30	Tichenor, John B.....	Aug. 4, 1884.
			31	Thacher, Don C.....	" 7, 1886.
			32	Trott, George.....	June 7, 1887.
			33	Welliver, Harry.....	May 23, 1887.
			34	Whiteman, Judson.....	Dec. 21, 1886.
			35	Willis, Edward G.....	Aug. 4, 1883.
			36	Wriker, States.....	May 14, 1885.

Strength of Company, 47.

SEVENTEENTH REGIMENT OF INFANTRY.

FIELD AND STAFF OFFICERS.

E. J. PocockColonel.
.....Lieut.-Colonel.
C. W. MontgomeryMajor.
.....Major.
E. A. BeverlyAdjutant.
John P. SmithQuartermaster.
John H. GerhardtSurgeon.
John J. Scribner Assist. Surgeon.
Wilbur S. Davidson.....Chaplain.

Non-Commissioned Staff and Band, with dates of Enlistment.

No.	Name and Rank.	Date of en- listment.	No.	Name and Rank.	Date of en- listment.
	<i>Sergeant-Major.</i>			<i>Hospital Steward.</i>	
1	R. M. Davidson	Aug. 15, 1884.	1	E. J. Hyatt.....	May 11, 1883.
	<i>Quartermaster-Sergeant.</i>			<i>Drum-Major.</i>	
1	J. C. Overmyer.....	Mar. 8, 1886.	1	A. H. Lynch.....	Aug. 11, 1886.
	<i>Com.-Sergeant.</i>			<i>Principal Musicians.</i>	
1	.....	.....	1	Frank Fieman	Aug. 11, 1885.
			2	James Yager	July 11, 1886.

Strength of Field, Staff and Band, 13.

Co. A—NEW LEXINGTON GUARD—NEW LEXINGTON—Organized June 10, 1876.

OFFICERS.

Thomas J. SmithCaptain.
James A. Teal.....1st Lieutenant.
Albert D. Fowler2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of en- listment.	No.	Name and Rank.	Date of en- listment.
	<i>Sergeants.</i>			<i>Corporals.</i>	
1	William T. Rambo.....	Oct. 15, 1883.	1	James W. Patton.....	Sept. 13, 1884.
2	Samuel Frame	Aug. 15, 1887.	2	William H. Saffell.....	June 14, 1884.
3	Whitney P. Carroll.....	July 8, 1884.	3	Arthur G. Davis.....	July 10, 1886.
4	Dora Cooper	June 7, 1883.	4	William Donnelly	June 6, 1885.
5	Elmer E. McCaslin.....	July 16, 1884.	5	Lincoln Penrod	June 30, 1886.

Co. A—NEW LEXINGTON GUARD—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Corporals--Continued.			Privates—Continued.		
6	Dell W. Stinchcomb.....	July 30, 1886.	12	Diller, H. A	July 16, 1886.
7	Isaac Whipps	"	13	Emerick, William.....	June 7, 1884.
8	Nathan Reinhart.....	Mar. 18, 1884.	14	Farbean, John H.....	July 31, 1886.
Musicians.			15	Goodin, Isaac E	June 21, 1884.
1	Jacob Rambo	Sept. 10, 1883.	16	Hammond, Charles E..	July 24, 1886.
2	Williard Bailey	"	17	Kessler, Francis A	Jan. 30, 1886.
Wagoner.			18	Kinsel, Thomas J	June 13, 1885.
1	Jesse Nichols.....	July 11, 1885.	19	Lennon, Charles.....	July 7, 1886.
Privates.			20	Mason, Arthur.....	" 14, 1886.
1	Allen, Charles.....	July 24, 1886.	21	McNeill, Joseph.....	Mar. 3, 1884.
2	Armstrong, Thomas M	Mar. 5, 1887.	22	McCaslin, Cidner W...	June 25, 1887.
3	Campbell, Arthur	Feb. 28, 1885.	23	Penrod, Jefferson	June 30, 1886.
4	Chandler, Charles	July 10, 1886.	24	Penrod, James W	July 7, 1886.
5	Coffman, John A.....	July 7, 1886.	25	Puterbaugh, Thomas...	Dec. 18, 1886.
6	Cooper, Arthur.....	"	26	Rambo, George.....	June 30, 1886.
7	Cooper, J. F.....	"	27	Shipley, Laban	July 18, 1886.
8	Coyle, Charles E.....	July 24, 1886.	28	Stewart, Howard.....	June 30, 1886.
9	Davis, John E.....	Sept. 10, 1883.	29	Strosider, Thomas	"
10	Davis, William R.....	July 17, 1886.	30	Stotts, John	July 7, 1886.
11	Denny, John S	Feb. 1, 1883.	31	Skillman, Frank	Dec. 18, 1886.
			32	Smith, Thomas J.....	Aug. 6, 1887.
			33	Teal, Herman A	June 30, 1886.
			34	Watkins, Oscar L.....	July 24, 1886.
			35	Wilson, Clinton.....	July 23, 1887.
			36	West, John E.....	"
			37	Yanger, John	July 31, 1887.

Strength of Company, 56.

Co. B—ZANESVILLE CITY GUARD--ZANESVILLE—Organized August 29, 1881.

OFFICERS.

Joseph Beckhardt.....Captain.
John C. Ogle1st Lieutenant.
Charles H. Booz2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Sergeants.			Musicians.		
1	Hal P. Willey.....	May 9, 1886.	1	Charles G. Barnell.....	July 14, 1884.
2	Charles H. Taylor	Nov. —, 1886.	2	Wash. G. Brookover....	Aug. 3, 1885.
3	.....	.....	Wagoner.		
4	.....	.....	1	.....	.....
5	.....	.....	Privates.		
Corporals.			1	Ailes, Fred	Mar. 1, 1884.
1	William Williams.....	Feb. 12, 1883.	2	Allman, Thomas	"
2	James W. Taylor.....	June 23, 1883.	3	Bagget, Charles W.....	Aug. 2, 1886.
3	Frank Gitter	"	4	Bauer, Theodore M.....	July 22, 1887.
4	Robert Price	Aug. 2, 1886.	5	Bell, William.....	May 9, 1886.
5	Virgil Brown	May 4, 1885.	6	Bolton, Benjamin	Aug. 2, 1886.
6	William R. Craven	Aug. 2, 1886.	7	Bunting, Thomas.....	Mar. 12, 1887.
7	.....	.....	
8	.....	.....	

Co. B—ZANESVILLE CITY GUARD—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Privates—Continued.</i>			<i>Privates—Continued.</i>		
8	Cain, William R.....	July 20, 1887.	35	Lowe, A. J.....	Mar. 12, 1887.
9	Chambers, Frank.....	Aug. 11, 1885.	36	Marsh, Edgar.....	Aug. 2, 1886.
10	Craven, Mark.....	Aug. 2, 1886.	37	McOwen, Charles	July 20, 1887.
11	Davis, Charles W.....	June 23, 1883.	38	McOwen, Cliff J.....	"
12	Davis, William R.....	July 20, 1887.	39	Mertz, Edward.....	Aug. 2, 1886.
13	Dieterly, George C.....	"	40	Metzendorf, Benjamin..	Mar. 1, 1884.
14	Dixon, Joseph	May 11, 1885.	41	Mitchell, George C.....	"
15	Factor, Charles A.....	July 20, 1887.	42	Moorehead, M. T.....	July 20, 1887.
16	Factor, Samuel	Aug. 2, 1886.	43	Perry, William O	"
17	Ferrel, John.....	July 20, 1887.	44	Purcell, Frank.....	Aug. 2, 1886.
18	Forgraves, Edward.....	Aug. 3, 1885.	45	Quinlan, Dennis	Mar. 12, 1887.
19	Frame, Harvey	Mar. 12, 1887.	46	Reed, Calvin W.....	" 1, 1884.
20	Gaab, Richard F.....	"	47	Riley, William.....	Aug. 11, 1885.
21	Grandstaff, R. L.....	"	48	Robinson, James.....	Mar. 1, 1884.
22	Greul, George.....	July 20, 1887.	49	Smith, Ellsworth	Aug. 2, 1886.
23	Halen, John	"	50	Smith, William E.....	Mar. 12, 1887.
24	Hamilton, John	"	51	Snoots, Harvey	July 20, 1887.
25	Hankinson, Orlando....	Aug. 2, 1886.	52	Snoots, Homer.....	"
26	Hagen, Frank P	July 22, 1887.	53	Sockman, John	Mar. 1, 1884.
27	Johnson, Samuel	"	54	Somers, George	May 9, 1886.
28	Keck, Joseph	Aug. 2, 1886.	55	Stanton, Lewis D	Aug. 3, 1885.
29	Keigan, George	Aug. 11, 1884.	56	Stotler, Walter C.....	July 20, 1887.
30	Kelly, Hugh.....	July 20, 1887.	57	Tomlinson, R. B.....	"
31	Kelly, John.....	Mar. 1, 1884.	58	Tracy, Bun.....	Aug. 2, 1886.
32	Kieran, John R.....	July 20, 1887.	59	Will, S. A.....	Mar. 1, 1884.
33	Knauer, George.....	"	60	Willis, Harry	May 9, 1886.
34	Leonard, Louis	Mar. 1, 1884.			

Strength of Company, 73.

Co. C—VANCE CADETS—MT. VERNON—Organized April 20, 1881.

OFFICERS.

Marcena M. Murphy.....Captain.
Robert H. Fowler.....1st Lieutenant.
Park Worley.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Sergeants.</i>			<i>Musicians.</i>		
1	William A. Sellers	Sept. 3, 1883.	1	Charles Wythe	Sept. 24, 1883.
2	Harry Blocher	Aug. 31, 1883.	2	.....	.....
3	William D. Bell	May 1, 1884.			
4	William E. Smith.....	July 19, 1887.	<i>Wagoner.</i>		
5	Harry C. Bechtol	July 29, 1885.	1	.....	.....
<i>Corporals.</i>			<i>Privates.</i>		
1	Ray S. Tilton.....	June 10, 1886.	1	Albaugh, Edward	July 5, 1887.
2	Warren H. White	"	2	Balcom, Otis J.....	Jan. 25, 1887.
3	Harry E. Gottshall.....	"	3	Blocher, Fred J.....	" 15, 1887.
4	Ellsworth W. Bruce ...	"	4	Botkins, George.....	June 15, 1886.
5	William E. Beach	July 16, 1886.	5	Bunn, John R.....	July 25, 1885.
6	Rollin H. Forrey.....	June 10, 1886.	6	Cochran, Elsie.....	June 10, 1886.
7	John H. Masteller	"	7	Coleman, Wm. H.....	June 17, 1886.
8	Charles L. Stevens	"			

Co. C—VANCE CADETS—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
	<i>Privates—Continued.</i>			<i>Privates—Continued.</i>	
8	Copper, Charles.....	July 27, 1886.	22	Mitchell, John E	June 29, 1886.
9	Critchfield, Wm. T	Aug. 3, 1885.	23	McKee, Frank.....	July 5, 1886.
10	Crider, Emmett	June 10, 1886.	24	Montis, Barker.....	May 17, 1887.
11	Chance, Thomas.....	Oct. 1, 1887.	25	Newby, Sam'l.	April 26, 1884.
12	Fry, Jacob	June 10, 1886.	26	Rinehart, Sam'l.	June 15, 1886.
13	Doran, Edward.....	July 5, 1886.	27	Sapp, John	Mar 23, 1887.
14	Hurley, Thornton.....	Aug. 1, 1885.	28	Sargent, Washington...	Aug, 8, 1885.
15	Kimb, Wm.....	June 17, 1886.	29	Sherman, Alton	June 21, 1887.
16	Lane, Joseph S.....	June 10, 1886.	30	Stevens, Arthur B.....	June 10, 1886.
17	Lamson, James.....	Aug. 3, 1885.	31	Stevens, J. Byron	July 5, 1886.
18	Lockwood, Fred.....	July 27, 1886.	32	Thacher, George.....	July 25, 1885.
19	Leedy, Charles R	"	33	Toby, Brooks.....	June 21, 1887.
20	McNare, Fred	June 17, 1886.	34	Torry, John	Aug. 1, 1883.
21	Mahaffey, Louis M.....	June 10, 1886.			

Strength of Company, 51.

Co. D—SALEM RIFLES—LOWER SALEM—Organized July 24, 1875.

OFFICERS.

Judson H. Hovey.....Captain.
George Lauer1st Lieutenant.
Walter Stanley2d Lieutenant.

Enlisted Men with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
	<i>Sergeants.</i>			<i>Privates.</i>	
1	Augustus P. Doan.....	July 7, 1883.	1	Alexander, Gip.....	July 11, 1885.
2	Jonathan L. Stanley ...	"	2	Broom, Joseph	June 13, 1885.
3	Edward S. Blake.....	June 9, 1883.	3	Briggs, Clements.....	Jan. 7, 1887.
4	William Watkins	July 29, 1887.	4	Cutshaw, Shannon	Apr. 9, 1887.
5	William Zumbro.....	May 7, 1884.	5	Crooks, H. W	May 30, 1887.
	<i>Corporals.</i>		6	Douthitt, Augustus	June 8, 1885.
1	Daniel True	May 10, 1884.	7	Doan, John P	July 3, 1884.
2	Charles Gildow.....	May 8, 1886.	8	Davidson, William C...	June 10, 1885.
3	John H. Schofield.....	Aug. 13, 1887.	9	Dutton, Walter.....	" 28, 1886.
4	.....	.....	10	Dixon, Martin.....	May 30, 1887.
5	Charles Trapp.....	May 9, 1885.	11	Eicharn, George.....	June 14, 1884.
6	.....	.....	12	Evans, George B	July 25, 1885.
7	Charles F. Shinn	Apr. 15, 1887.	13	Feldner, Frank.....	Feb. 12, 1887.
8	.....	.....	14	Gregory, Wesley D.....	May 14, 1884.
	<i>Musicians.</i>		15	Gregory, Melvin	June 14, 1884.
1	Henry Stanley	Aug. 17, 1883.	16	Gutheil, Lewis	July 10, 1884.
2	.....	.....	17	Howell, James	June 9, 1883.
	<i>Wagoner.</i>		18	Hoit, Joel W	Apr. 10, 1886.
1	Peter Gruber.....	June 23, 1884.	19	Hoit, Charles.....	June 28, 1884.
			20	Hall, Charles W.....	Apr. 4, 1885.
			21	Hockinberry, Chas....	May 30, 1885.
			22	Haskins, David	July 29, 1885.
			23	Hannah, William A....	Aug. 3, 1885.
			24	Harper, David M.....	June 26, 1886.
			25	Hammond, J. H.....	May 30, 1887.

Co. D—SALEM RIFLES—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Privates—Continued.</i>			<i>Privates—Continued.</i>		
26	Holdren, Narvill	July 23, 1887.	41	Rapp, Charles	May 8, 1886.
27	Jackson, George C.....	" 14, 1883.	42	Rogers, Nathan.....	June 12, 1886.
28	King, James W.....	May 31, 1884.	43	Schultheisz, Peter.	Apr. 6, 1885.
29	King, Francis	June 14, 1884.	44	Schramm, Lewis	Apr. 10, 1886.
30	Kidd, Charles.....	" 2, 1884.	45	Schofield, A. W	June 11, 1887.
31	Kirsch, Fredrick	" 12, 1886.	46	Schofield, H. D	"
32	Kirkbride, William.....	" 12, 1886.	47	Thomas, Fred.....	Mar. 28, 1884.
33	Laner, George.....	July 23, 1887.	48	Thomas, William H....	June 26, 1886.
34	Morris, John G.....	Apr. 14, 1883.	49	Tarlton, Grant	May 10, 1884.
35	Morrison, David.....	May 8, 1886.	50	Twiggs, Warren A	Mar. 14, 1885.
36	Miller, John.....	July 9, 1887.	51	Tyson, C. E.....	July 14, 1887.
37	McCoy, James.....	" 18, 1883.	52	Vaughn, Anda	July 14, 1883.
38	Moor, Perry.....	" 8, 1884.	53	Wolfe, Thomas.....	May 8, 1886.
39	Moor, William P.....	June 28, 1886.	54	Wilson, T. C	May 30, 1887.
40	Romire, Fred.....	Apr. 11, 1885.			

Strength of Company, 69.

Co. E—AXLINE CADETS—NEW MATAMORAS—Organized December 22, 1885.

OFFICERS.

William L. West.....Captain.
John W. Watson1st Lieutenant.
Israel Earley2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Sergeants.</i>			<i>Privates.</i>		
1	Edward M. Grohs	Dec. 22, 1885.	1	Anderson, James S.....	Dec. 22, 1885.
2	George Springer.....	"	2	Baker, William M.....	"
3	Joseph Cunningham...	"	3	Barnhart, Orlando.....	"
4	Samuel J. Harvey.....	"	4	Brooks, Frank	Jan. 15, 1886.
5	.....	.....	5	Barnhart, Jonas.....	July 31, 1886.
<i>Corporals.</i>			6	Baker, Isaac.....	Apr. 11, 1887.
1	Shelby Cochran	Dec. 22, 1885.	7	Bever, Elmer	Apr. 18, 1887.
2	Charles O. Brooks	"	8	Cochran, Remus B	Dec. 22, 1885.
3	Robert R. Dembo.....	"	9	Cunningham, Jas. B ...	"
4	William Dorff.....	"	10	Caton, James H.....	April 5, 1886.
5	Enoch Minder.....	"	11	Cochran, Millard	Apr. 11, 1887.
6	John W. Hutchinson...	"	12	Davis, Pierce	Mar. 30, 1887.
7	.....	.....	13	Ellis, William P.	Dec. 22, 1885.
8	.....	.....	14	Fulmer, George	"
<i>Musicians.</i>			15	Haushenuaker, Louis..	"
1	William Whetstone	Aug. 15, 1886.	16	Hoffman, Edward A ...	"
2	Clarence Springer.....	Dec. 22, 1885.	17	Hoffman, Robert H.....	April 4, 1886.
<i>Wagoner.</i>			18	Irwin, Melvin.....	Apr. 11, 1887.
1	John T. Cunningham.	July 26, 1886.	19	Jones, James A	Dec. 22, 1885.
			20	Koontz, Samuel F.....	"
			21	Linch, William H.....	"
			22	Little, Francis M.....	"
			23	Lamping, Francis W...	"
			24	Miller, Albert	"
			25	Miller, Charles	"

Co. E—AXLINE CADETS—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Privates—Continued.</i>			<i>Privates—Continued.</i>		
26	McKnight, James	July 26, 1886.	35	Talbot, William.....	Apr. 12, 1887.
27	Minder, James	Mar. 7, 1887.	36	Traugh, William	" 15, 1887.
28	Minder, Conrad.....	Apr. 11, 1887.	37	Watson, Benjamin F...	Dec. 22, 1885.
29	Nelley, Frederick	Jan. 15, 1886.	38	West, David O.....	"
30	Oliver, Charles	Dec. 22, 1885.	39	Walter, Oliver.....	"
31	Riggs, Robert H.....	Aug. 4, 1886.	40	Wilson, William	"
32	Slack, Valentine	Dec. 22, 1885.	41	Wade, Fred	Apr. 11, 1887.
33	Slonaker, Solomon.....	"	42	Wilson, Clifford	July 21, 1887.
34	Slack, John.....	Apr. 11, 1887.			

Strength of Company, 58.

Co. F—COSHOCOTON GUARD—COSHOCOTON--Organized September 30, 1876.

OFFICERS.

Samuel M. Price .. Captain.
John Demos.....1st Lieutenant.
Lloyd T. Judd 2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Sergeants.</i>			<i>Privates—Continued.</i>		
1	Thomas E. Willis	Apr. 16, 1884.	6	Cornell, John A.....	May 22, 1886.
2	Frank O. Bible	July 1, 1885.	7	Dunfee, Jesse.. ..	Apr. 1, 1885.
3	.....	.....	8	Dorsey, Robert	June 23, 1881.
4	.....	.....	9	Elliott, Ernest	Dec. 20, 1885.
5	.....	.....	10	Everhart, James M.....	Feb. 12, 1887.
<i>Corporals.</i>			11	Ferrel, George C.....	Oct. 15, 1886.
1	Charles C. Chaney.....	July 1, 1880.	12	Finnel, Bartlett	April 4, 1887.
2	Grant Cross	Aug. 11, 1883.	13	Groce, Porter D	Apr. 16, 1884.
3	James B. Richison	Apr. 16, 1884.	14	Irvine, George.....	June 23, 1886.
4	Joseph B. Stubbs.....	Nov. 30, 1881.	15	Kaser, Edward H.....	June 19, 1886.
5	.....	.....	16	Maston, John.....	Aug. 11, 1883.
6	.....	.....	17	Markley, John M	Apr. 11, 1885.
7	.....	.....	18	Mulford, Henry L.....	July 1, 1885.
8	.....	.....	19	McCabe, Edward	July 21, 1886.
<i>Musicians.</i>			20	Neutse, George E	July 6, 1887.
1	Thomas W. Morris.....	Nov. 30, 1886.	21	Park, Samuel H.....	Aug. 10, 1884.
2	Charles B. Smith	Sept. 17, 1887.	22	Perry, William D	June 19, 1886.
<i>Wagoner.</i>			23	Randles, Stanton.....	Oct. 15, 1886.
1	.....	.....	24	Randles, Charles	Nov. 30, 1886.
<i>Privates.</i>			25	Richards, Thomas H...	Feb. 23, 1887.
1	Austin, Abram L	Apr. 16, 1884.	26	Routledge, Gilbert O ..	" 5, 1887.
2	Brown, Levi M.....	Aug. 2, 1884.	27	Speaks, John B.....	Aug. 10, 1884.
3	Bible, Saul	July 1, 1885.	28	Thompkins, George B..	June 23, 1886.
4	Bible, Milton R	June 19, 1886.	29	Watson, Charles.....	Aug. 9, 1884.
5	Bible, Frank L	Apr. 1, 1887.	30	Wilhelm, Charles	"
			31	Wright, Judson	July 1, 1885.
			32	Welling, George T.....	May 1, 1886.
			33	Walker, Wilburn R	July 6, 1887.
			34	Waddell, Charles G.....	Feb. 9, 1887.
			35	Wetherell, Thomas ...	May 7, 1887.
			36	Yeager, James.....	July 21, 1886.
			37	Zimmer, John V	Apr. 4, 1887.

Strength of Company, 48.

Co. G—NEWARK GUARD—NEWARK—Organized August 21, 1877.

OFFICERS.

Frank G. WardenCaptain.
William B. Eldridge1st Lieutenant.
.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Sergeants.			Privates—Continued.		
1	Chas. H. Morath	Mar. 21, 1884.	9	Donahue, John.....	July 12, 1886.
2	Philip Smythe	Aug. 22, 1885.	10	Davidson, Red	Oct. 1, 1883.
3	Harry C. Miller	July 16, 1883.	11	Evans, Herbert L.....	June 12, 1886.
4	C. O. Francis	Aug. 14, 1883.	12	Flint, Geo	Mar. 23, 1887.
5	Harry D. Fulton	June 5, 1885.	13	Foster, Joseph B	June 28, 1887.
Corporals.			14	Fulton, James.	Feb. 18, 1884.
1	Allie Irwin.....	July 16, 1883.	15	Grimm, Clifton.....	Jan. 14, 1887.
2	James H. Ferguson	June 12, 1886.	16	Hafer, John Geo	Oct. 24, 1887.
3	Wm. H. Donaldson ...	"	17	Houston, Frank.....	June 12, 1886.
4	Lawrence Renz, Jr	"	18	Hebson, Edward	"
5	Milton Phillips.....	Feb. 19, 1885.	19	Hamilton, Ernest	Mar. 23, 1887.
6	Warner Hickerson	" 23, 1887.	20	Henry, Samuel D	Feb. 23, 1887.
7	Chas. M. Wells	July 19, 1884.	21	Harbaugh, Wm	Mar. 21, 1884.
8	Chas. F. Sowersby.....	Aug. 5, 1887.	22	Irwin, Walter.....	Mar. 23, 1887.
Musicians.			23	Lilliard, Robert W.....	June 12, 1886.
1	Cliff Rosebraugh	Oct. 20, 1886.	24	Monroe, Hallison.....	June 15, 1885.
2	Clarence Houston	Aug. 1, 1884.	25	Marvin, Fred.....	May 18, 1887.
Wagoner.			26	Myers, John H	June 12, 1886.
1	Wm. Walton	Jan. 8, 1887.	27	Nichols, Jesse	"
Privates.			28	Nutter, Edward	"
1	Baldwin, Jesse	May 6, 1885.	29	Osborn, Landon.....	Mar. 23, 1887.
2	Burton, Edward.....	June 23, 1884.	30	Patton, John	June 23, 1884.
3	Bylmire, Frank	June 12, 1886.	31	Roe, George E.	June 12, 1886.
4	Bierley, George H.....	Feb. 23, 1887.	32	Roe, Frank E.....	"
5	Bailey, Edward L	Mar. 15, 1887.	33	Smith, Calvin	June 3, 1884.
6	Burke, Edward.....	Aug. 5, 1887.	34	Scott, George F.....	June 28, 1887.
7	Coffman, Walter E.....	Feb. 23, 1887.	35	Taylor, Alex	July 19, 1884.
8	Caine, Chas.....	May 5, 1887.	36	Thrapp, Edward J.....	June 12, 1886.
			37	Timms, John.....	Nov. 1, 1886.
			38	Tracy, Arch	July 12, 1886.
			39	Williams, John C	July 19, 1884.
			40	Wilson, T. Wm	July 16, 1883.
			41	Winstanley, Abe G.....	July 18, 1885.
			42	Wood, Frank	June 12, 1886.
			43	Wells, John W	Feb. 23, 1887.
			44	Wartham, Jas. A.....	June 11, 1887.

Strength of Company, 62.

Co. H—PLIMPTON GUARD—PLIMPTON—Organized July 17, 1884.

OFFICERS.

David Collier.....Captain.
Ammon B. Critchfield.....1st Lieutenant.
Milton T. Scarborough2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Sergeants.			Privates—Continued.		
1	Richard E. Pocock.....	July 17, 1884.	8	Compton, John D.....	July 30, 1887.
2	Robert R. Thompson...	"	9	Corry, William A.....	Feb. 12, 1887.
3	Roy C. Paul.....	"	10	Crone, Albert G.....	July 17, 1884.
4	Judson D. Swassick.....	"	11	Dillgard, Henry C... ..	Oct. 8, 1887.
5	Granville M. Sparks.....	"	12	DeWitt, Charley.....	Apr. 25, 1885.
Corporals.			13	Emmons, Palmer.....	July 17, 1884.
1	Alvin R. Outland.....	July 17, 1884.	14	Ferris, William.....	"
2	Edward Fitzgerald.....	"	15	Finney, Thomas D....	"
3	Andrew J. Blankley...	"	16	Gross, John.....	"
4	George W. Riffle.....	Apr. 25, 1885.	17	Gilbert, Silas M.	"
5	William Rush.....	July 17, 1884.	18	Harris, Marvin E.....	"
6	James H. Butler.....	"	19	Hile, Samuel.....	"
7	William Bruce.....	"	20	Kerr, Joseph.....	Aug. 9, 1884.
8	.....	.....	21	Kerr, W Bert.....	"
Musicians.			22	Keggs, Charles W.....	July 17, 1884.
1	Charles Collier.....	Aug. 28, 1886.	23	Kline, Martin.....	Aug. 29, 1884.
2	George C. Gilbert.....	Apr. 25, 1885.	24	Kline, Knox.....	July 30, 1887.
Wagoner.			25	Lyberger, Samuel J....	"
1	.....	.....	26	Lee, Leander.....	Sept. 26, 1885.
Privates.			27	Mundorff, John B.....	July 11, 1885.
1	Aylsworth, Neal.....	July 17, 1884.	28	Moore, Charles W....	Sept. 26, 1885.
2	Beer, Ralph W.....	July 31, 1887.	29	Norris, Samuel.....	July 30, 1887.
3	Bitner, Delorma.....	Oct. 8, 1887.	30	Newkirk, Lyman J.....	July 17, 1884.
4	Baxter, Charles O.....	Apr. 22, 1887.	31	Rennell, Charles.....	"
5	Blankley, Warren W...	July 24, 1886.	32	Rush, Daniel.....	"
6	Boyer, Noah S.....	July 30, 1887.	33	Rush, George.....	July 30, 1887.
7	Barr, John.....	July 17, 1884.	34	Repp, James.....	Oct. 8, 1887.
			35	Shreve, Allen.....	Sept. 27, 1884.
			36	Shreve, Thomas A....	July 17, 1884.
			37	Swain, William.....	Apr. 22, 1887.
			38	Wise, Edward W.....	July 17, 1884.
			39	Wise, Ben.....	"
			40	Wachtel, Charles F.....	"
			41	Woodhull, Charles J...	"

Strength of Company, 58.

Co. K—ATHERTON GUARD—HEBRON—Organized December 17, 1878.

OFFICERS.

Hamlin D. Burch.....Captain.
R. S. Holtsberry.....1st Lieutenant.
Frank Bruner.....2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
Sergeants.			Sergeants—Continued.		
1	John W. Oldaker.....	Mar. 2, 1884.	4	Edward A. Avery.....	June 3, 1884.
2	D. W. Turner.. ..	"	5	L. E. Wharton.....	Aug. 10, 1885.
3	John H. Turner.....	May 8, 1884.			

Co. K—ATHERTON GUARD—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Corporals.</i>			<i>Privates—Continued.</i>		
1	Edward Holtsberry.....	Aug. 11, 1883.	12	Hatfield, William E.....	Mar. 2, 1884.
2	Frank Jones.....	" 9, 1884.	13	Hilbrant, William H...	Sept. 29, 1884.
3	William Reed.....	June 22, 1885.	14	Hunt, Joseph	June 14, 1886.
4	John H. Sawyer.....	June 14, 1886.	15	Howard, Eurice.....	"
5	Era White.....	"	16	Howard, William	"
6	Edward Mossman.....	"	17	Hartman, Henry N.....	May 8, 1884.
7	W. R. Rankin... ..	May 23, 1887.	18	Holtsberry, George.....	Mar. 2, 1884.
8	Henry Weyirach.....	June 14, 1886.	19	Insley, Simpson.....	July 29, 1884.
<i>Musicians.</i>			20	Kelley, J. Owen.....	Mar. 2, 1884.
<i>Wagoner.</i>			21	Lyon, V. W.....	"
1	Otto E. Burch.....	Mar. 2, 1884.	22	Lee, F. B.....	Feb. 2, 1887.
2	S. Q. Lecrone.....	June 14, 1886.	23	Lamp, Wm. H.....	June 14, 1886.
<i>Privates.</i>			24	Palmer, James.....	Mar. 2, 1884.
1	George Myers.....	Mar. 2, 1884.	25	Richards, James.....	Mar. 9, 1885.
1	Allspaugh, W. R.....	Apr. 11, 1887.	26	Smith, David.....	Feb. 7, 1887.
2	Burch, Adelbert.....	Aug. 11, 1883.	27	Smith, J. S.....	June 14, 1886.
3	Burch, Harry.	June 14, 1886.	28	Street, Edward.....	June 11, 1883.
4	Bruner, George W.....	Aug. 19, 1884.	29	Street, Ira.....	June 14, 1886.
5	Braden, Samuel.....	June 14, 1886.	30	Sawyer, John I.....	June 26, 1885.
6	Comstock, Joan... ..	July 21, 1884.	31	Sawyer, Riley.....	June 14, 1886.
7	Cooperider, Noah.....	June 14, 1886.	32	Sensabaugh, L. A.....	May 29, 1884.
8	Dougherty, Harry W...	Aug. 9, 1884.	33	Snare, M. H.....	June 14, 1886.
9	Eichelberger, Simeon..	June 14, 1886.	34	Sams, Otto M.....	April 11, 1887.
10	Fulton, Charles.....	Mar. 2, 1884.	35	Turner, W. H.....	June 14, 1886.
11	Fulk, Edward.....	Feb. 23, 1887.	36	Tagert, John C	Mar. 9, 1887.
			37	Trovinger, John R....	May 23, 1887.
			38	Vermillion, James. ...	June 14, 1886.
			39	Wilson, Edward.....	June 23, 1885.
			40	Wagy, Philip.....	June 29, 1885.
			41	Wells, Charles N.....	Sept. 29, 1884.

Strength of Company, 60.

TOLEDO CADETS—TOLEDO—Organized March 17, 1879.

OFFICERS.

William V. McMakenCaptain.
William H. Cook.....1st Lieutenant.
Thomas T. Watters2d Lieutenant.

Enlisted Men, with Dates of Enlistment.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Sergeants.</i>			5	.....	.....
			6	.....	.....
1	William F. Johnston...	Dec. 22, 1879.	7	.....	.....
2	Eugene W. Gage	Mar. 17, 1879.	8	.....	.....
3	Dewitt C. Linn.....	Jan. 19, 1880.	<i>Musicians.</i>		
4	Graham B. Lownsbury	Oct. 18, 1880.	1	.....	.....
5	Benjamin D. Vail	Apr. 3, 1882.	2	.....	.....
<i>Corporals.</i>			<i>Wagoner.</i>		
1	Richard K. Rundell	Nov. 13, 1881.			
2	Sheridan E. Law	July 18, 1883.			
3	P. Carlton Walker	Nov. 11, 1880.			
4	Edwin C. Frisbie.....	Dec. 27, 1883.	1	.....	.....

TOLEDO CADETS—Continued.

No.	Name and Rank.	Date of enlistment.	No.	Name and Rank.	Date of enlistment.
<i>Privates.</i>			<i>Privates—Continued.</i>		
1	Atwill, Wm. H.....	Oct. 6, 1884.	22	Nolen, John D.....	Sept. 13, 1887.
2	Breyman, Eugene G ...	Dec. 7, 1886.	23	Paine, Chas. S.....	Feb. 19, 1886.
3	Brigham, Wm. O.....	July 14, 1884.	24	Paine, George P.....	Jan. 4, 1886.
4	Brophy, Stephen	Mar. 5, 1886.	25	Parsons, Eugene S.....	Oct. 1, 1886.
5	Caine, Charles.....	" 12, 1886.	26	Parsons, John J.....	Aug. 27, 1887.
6	Chapman, H. M.....	Apr. 3, 1887.	27	Parks, George M.....	Sept. 13, 1887.
7	Cochran, Witt K.....	Feb. 23, 1885.	28	Perrin, Arthur W.....	Jan. 10, 1886.
8	Cooke, Frank S.....	Sept. 7, 1886.	29	Pixley, Edward J.....	July 21, 1884.
9	Cowles, Willard F.....	Mar. 16, 1885.	30	Quine, Fred. K.....	Jan. 12, 1885.
10	Durian, Chas. H.....	Mar. 2, 1885.	31	Ray, Pliny C.....	Jan. 5, 1885.
11	Goodall, Harry H.....	July 7, 1884.	32	Raymer, James E.....	May 28, 1885.
12	Hansen, Samuel.....	July 18, 1886.	33	Raymer, Luther G.....	Sept. 13, 1887.
13	Harroun, Robert E.....	Feb. 2, 1886.	34	Rowley, Arthur F.....	July 14, 1884.
14	Hooper, Harrison S.....	Mar. 17, 1879.	35	Smith, Mark M.....	May 29, 1887.
15	Howells, Frank I.....	Mar. 7, 1881.	36	Spielbusch, Jon. H., Jr.	Sept. 28, 1887.
16	Maxon, Bruce E.....	Apr. 25, 1884.	37	Vincent, James B.....	Mar. 17, 1887.
17	McCutcheon, Fred. D...	Aug. 25, 1886.	38	Waite, George T.....	Feb. 19, 1886.
18	McKecknie, Clarence E	Apr. 30, 1887.	39	Welbon, William G.....	Apr. 3, 1887.
19	Messenger, Rosewell E	Sept. 13, 1887.	40	Whittingham, T. H.....	July 18, 1883.
20	Middaugh, Herman J..	"	41	Wylie, James H.....	Sept. 13, 1887.
21	Morris, Fred. P.....	May 10, 1887.			

Strength of Company, 53.

TABLE SHOWING STRENGTH OF OHIO NATIONAL GUARD AT THE CLOSE OF THE FISCAL YEAR ENDING
NOVEMBER 15, 1887.

Organization.	Major-Generals.	Brigadier Generals.	Colonels.	Lieutenant-Colonels.	Majors.	Adjutants.	Quartermasters.	Surgeons.	Assistant Surgeons.	Chaplains.	Non-commissioned Staff and Band.	Captains.	First Lieutenants.	Second Lieutenants.	Non-commissioned officers.	Musicians, Company.	Wagoners.	Privates.	Aggregate.	Aggregate Nov. 15, 1886.	Gain or loss during the year.	
First Regiment.....	1	1	2	1	1	1	1	1	28	7	7	5	73	14	.....	280	423	410	+	13
Second Regiment	1	1	2	1	1	1	1	1	31	8	8	9	100	14	2	314	495	422	+	73
Third Regiment.....	1	1	2	1	1	1	1	1	29	8	7	7	72	11	8	295	446	433	+	13
Fifth Regiment	1	1	.....	1	1	1	1	1	31	8	7	8	89	6	3	320	479	400	+	79
Sixth Regiment	1	1	2	1	1	1	1	1	23	7	7	8	98	16	1	322	491	504	+	13
Seventh Reg't (Disbanded)	397	-	397
Eighth Regiment	1	1	2	1	1	1	1	1	29	8	8	7	91	10	6	311	479	457	+	22
Ninth Battalion	1	.....	1	.....	.....	1	3	3	3	3	38	6	.....	144	203	200	+	3
Thirteenth Regiment.....	1	1	1	1	1	1	.....	1	29	8	7	7	83	13	5	316	475	386	+	89
Fourteenth Regiment.....	1	1	1	1	1	1	1	1	30	10	11	9	112	14	2	389	585	601	-	16
Sixteenth Regiment.....	1	1	1	.....	1	.....	1	1	26	8	8	8	86	7	1	275	425	467	-	42
Seventeenth Regiment.....	1	.....	1	1	1	1	1	1	6	9	9	8	97	16	5	388	545	517	+	28
Unattached Infantry.....	1	1	1	9	.....	.....	41	53	45	+	8
Total Infantry.....	10	9	15	9	11	9	9	11	265	85	83	80	948	127	33	3395	5099	5339	-	140
First Regiment Light Art'y...	1	1	2	1	1	1	8	1	23	8	7	12	99	13	1	351	530	520	+	10
First Cleveland Troop.....	1	1	1	13	4	.....	29	49	.....	+	49
Governor's Staff.....	1	3	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	16	.....	.....	.....
Grand total.....	1	3	23	10	17	10	12	10	17	12	288	94	81	93	1060	144	34	3775	5694	5775	-	81

STATEMENT

OF ORDNANCE AND ORDNANCE STORES, CAMP AND GARRISON EQUIPAGE, CLOTHING, ETC., RECEIVED, ISSUED, REMAINING ON HAND AT THE STATE ARSENAL, AND IN POSSESSION OF THE OHIO NATIONAL GUARD, FOR THE YEAR ENDING NOVEMBER 15, 1887.

Articles.	On hand in the State Arsenal Nov. 15, 1886.	Received from all sources during the year.	Issued, expended, dropped and sold during the year.	On hand in the State Arsenal Nov. 15, 1887.	In possession of the National Guard.	Total to be accounted for.
<i>Guns, Carriages, etc.</i>						
Steel, rifled, 3-in.....					12	12
Carriages and limbers, 3-in					12	12
Caissons					12	12
Bronze, 12 pounder.....	10		2	8	4	14
Carriages and limbers, 12 pounder.....	10		2	8	4	14
Caissons and limbers, "	4			4	4	8
Bronze, 6 pounder.....	4	2	3	3	9	12
Carriages and limbers, 6 pounder.....	4	2	3	3	9	12
Caissons and limbers, "	2	2	4		18	18
Iron, 6 pounder.....	5			5		5
Gatling guns.....	2		2		10	10
Gatling gun carriages and limber (wood)					5	5
Gatling gun carriages and limber (metal).....	2		2		5	5
Limbers, 6 pounder.....	11		2	9	11	20
Traveling forges.....	4			4		4
Battery wagons.....	1			1	3	4
<i>Rifles, etc.</i>						
B. L. Springfield rifles, cal. 45.....	742	1,152	280	1,614	5,163	6,777
French and Belgian muskets.....	120	14	28	106		134
Gun-slugs.....	707			707	4,983	5,970
Spencer repeating shot-guns.....	240			240		240
<i>Side-arms.</i>						
Sabers (artillery)	131		5	126	440	566
Sabers (cavalry)	86			86		86
Saber belts.....	23			23		23
Saber attachments.....		50	50		50	50
Swords, non-commissioned officers..	52		8	44	75	127
Belts and plate, non-com. " ..	52		8	44	75	127
Revolvers (Colt's)		50	50		50	50
Pistol-holsters.....		50	50		50	50
Carbine boots and straps.....		50	50		50	50
<i>Implements (artillery).</i>						
Fuse-gouges					16	16
Gunners' gimlets	8		3	5	33	38
Gunners' haversacks	18		1	17	39	56
Gunners' pinchers.....					15	15
Handspikes (trail)	18		8	10	58	66

STATEMENT—Continued.

Articles.	On hand in the State Arsenal Nov. 15, 1886.	Received from all sources during the year.	Issued, expended, dropped and sold during the year.	On hand in the State Arsenal Nov. 15, 1887.	In possession of the National Guard.	Total to be accounted for.
<i>Implements (artillery)—Continued.</i>						
Lanyards	38	.....	3	35	47	82
Pendulum hausses, 12 p'dr.....	7	.....	1	6	5	11
Pendulum hausses, 6 "	8	6	3	11	19	30
Prolongs	15	3	.....	18	27	45
Priming-wires	35	.....	2	33	42	75
Pole-pads.....	28	.....	4	24	46	70
Paulins.....	20	.....	6	14	35	49
Sponge-bucket (iron).....	1	.....	.....	1	19	20
Sponge-covers.....	83	.....	.....	83	24	107
Sponges and rammers, 12 pounder ...	26	.....	3	23	9	32
" " 6 "	26	7	.....	33	35	68
" " 3-inch rifle..	10	.....	.....	10	23	33
Tube-pouches	9	.....	4	5	31	36
Thumb-stalls.....	20	.....	4	16	42	58
Tar-buckets (iron).....	17	.....	.....	17	27	44
" (rubber)	4	.....	.....	4	4	8
Vent-covers	37	.....	1	36	26	62
Vent-punches .....	.....	.....	.....	.....	21	21
Wormers and staves	4	.....	.....	4	21	25
Water-buckets (rubber) .....	.....	.....	.....	.....	38	38
Wheel-felloes.....	94	.....	.....	94	.....	94
Wheel-spokes	153	.....	.....	153	.....	153
Tow-hooks	16	.....	.....	.....	16	16
Brush-hooks	6	.....	.....	6	6	12
<i>Equipments (Gatling gun.)</i>						
Feed magazine	8	.....	8	.....	40	40
Cam extractors.....	2	.....	2	.....	10	10
Drifts.....	2	.....	2	.....	10	10
Handspikes (trail).....	.....	.....	.....	.....	10	10
Lock screw-drivers.....	2	.....	2	.....	10	10
Oilers (tin).....	2	.....	2	.....	10	10
Screw-wrenches	2	.....	2	.....	10	10
Screw-drivers (small)	2	.....	2	.....	10	10
Sight-cases .....	.....	.....	.....	.....	5	5
T screw-drivers.....	2	.....	2	.....	10	10
Pin-wrenches	2	.....	2	.....	10	10
Pointing-levers.....	2	.....	2	.....	10	10
Riveting-hammers	2	.....	2	.....	10	10
Wiping-rods (brass)	2	.....	2	.....	10	10
Gun-covers	2	.....	2	.....	10	10
<i>Equipments (Infantry).</i>						
Bayonets .....	.....	.....	.....	47	.....	47
Bayonet scabbards (steel).....	1,329	.....	17	1,312	5,167	6,479
Breech block-cap screws	127	.....	.....	127	247	374
Bridles for rifles.....	136	2	.....	138	2	149
Bridle-screws.....	140	.....	.....	140	10	150
Ball-screws	5,860	.....	.....	5,860	140	6,000
Cartridge-boxes (new).....	609	.....	155	454	5,168	5,622

STATEMENT—Continued.

Articles.	On hand in the State Arsenal Nov. 15, 1886.	Received from all sources during the year.	Issued, expended, dropped and sold during the year.	On hand in the State Arsenal Nov. 15, 1887.	In possession of the National Guard.	Total to be accounted for.
<i>Equipments (Infantry)—Continued.</i>						
Cartridge-boxes (old).....	595	.....	.....	595	.....	595
Combination screw-drivers.....	536	.....	.....	536	1,895	2,431
Cam-latch springs.....	152	.....	.....	336	353	689
Extractors.....	336	.....	12	140	386	526
Ejector springs.....	41	303	.....	344	352	696
“ “ spindles.....	164	.....	2	162	287	449
Firing pins.....	607	.....	176	431	671	1,102
“ “ springs.....	729	.....	74	655	501	1,156
“ “ screws	1,110	.....	.....	1,110	252	1,362
Gun-wipers.....	18,800	.....	.....	18,800	.....	18,800
Headless shell extractors.....	640	750	.....	1,390	312	1,702
Lubricants	9,000	.....	1,250	7,750	.....	9,000
Main springs.....	148	13	.....	161	1,414	1,575
Re-loading tools.....	30	.....	.....	30	50	80
Sear-springs.....	82	59	.....	141	399	540
“ screws .....	.....	158	.....	158	.....	158
Screw-drivers (new).....	136	1,030	280	886	250	1,136
“ (old).....	.....	.....	.....	16,140	135	16,275
Spring-vises..	200	52	14	238	127	365
Tumbler screws.....	259	.....	.....	259	377	636
“ punches.....	285	236	56	435	376	911
Wiping rods (wood).....	.....	1,030	280	750	.....	750
Waist-belts	895	.....	804	91	6,071	6,162
“ plates	895	.....	804	91	6,071	6,162
Knapsacks .....	.....	3,900	3,882	8	3,882	3,900
Haversacks and straps.....	.....	1,000	535	465	535	1,000
Canteens .....	.....	4,500	4,335	165	4,335	4,500
<i>Equipments (Spencer repeating shot guns).</i>						
Main springs....	24	.....	.....	24	.....	24
Firing pins.....	24	.....	.....	24	.....	24
Firing pin springs.....	24	.....	.....	24	.....	24
Sear springs..	24	.....	.....	24	.....	24
Cartridge stops	24	.....	.....	24	.....	24
Slider plate screws.....	48	.....	.....	48	.....	48
Cartridge stop spring screws.....	24	.....	.....	24	.....	24
Extractors.....	24	.....	.....	24	.....	24
Screw-drivers	240	.....	.....	240	.....	240
Cleaning rods.....	48	.....	.....	48	.....	48
<i>Ammunition.</i>						
Ball cartridges, cal. 45.....	143,379	100,000	35,644	206,735	80,000	291,735
Blank “ “ .....	.....	.....	6,090	6,090	.....	6,000
Practice shells, “	460	764	.....	1,224	.....	1,224
Rounded balls, “	8,450	.....	895	7,585	.....	8,450
Elongated balls, “	179,900	220	.....	200,120	.....	200,120
Eureka shells.....	169	100	.....	239	30	269

STATEMENT—Continued.

Articles.	On hand in the State Arsenal Nov. 15, 1886.	Received from all sources during the year.	Issued, expended, dropped and sold during the year.	On hand in the State Arsenal Nov. 15, 1887.	In possession of the National Guard.	Total to be accounted for.
<i>Ammunition—Continued.</i>						
Eureka shot	238	100	198	140	.....	140
Solid shot, 12 pounder.....	14	.....	.....	14	.....	14
“ 6 “	8	.....	.....	8	.....	8
Case shot, 3-in.....	91	.....	.....	91	.....	91
Canister, 6 pounder.....	117	.....	.....	117	.....	117
“ fixed, 6 pounder.....	8	.....	.....	8	.....	8
Blanks, 6 pounder.....	79	400	400	79	.....	79
Fuse shells, 12 pounder.....	40	.....	.....	40	.....	40
“ 6 “ .....	.....	14	.....	14	.....	14
Primers	183,750	.....	7,750	176,000	.....	183,750
<i>Harness and Horse equipments.</i>						
Bridles (riding).....	30	.....	21	9	75	84
Bridles (artillery).....	16	.....	.....	16	.....	16
Breast yokes	27	.....	.....	7	20	27
Breast straps.....	8	.....	.....	8	7	15
Belly bands.....	24	.....	6	18	34	52
Cruppers (saddle)....	34	.....	15	9	15	49
“ (harness)	12	.....	.....	12	14	26
Curry combs.....	.....	1	.....	1	.....	1
Girths (saddle).....	38	.....	23	15	55	70
Horse collars.....	25	.....	2	23	.....	25
Halters	5	17	.....	22	.....	22
Harness, double-wheel (complete)....	.....	.....	.....	.....	65	65
Harness, “ lead “ .....	.....	.....	.....	.....	66	66
Hames (iron).....	73	.....	.....	73	.....	73
“ (wood)	7	.....	.....	7	3	10
Loin straps.....	4	.....	.....	4	11	15
Leg guards.....	10	.....	.....	10	.....	10
Non-commissioned officers' horse equipments .....	.....	.....	.....	.....	75	75
Picket-pins.....	.....	.....	.....	.....	32	32
Pick-axes.....	5	.....	.....	5	1	6
Saddles (officers).....	56	.....	38	18	83	101
“ (artillery men).....	.....	.....	.....	.....	15	15
“ (“ officers).....	.....	.....	.....	.....	160	160
Stirrups	76	.....	38	38	78	116
“ straps	68	.....	40	28	92	120
Valises	36	.....	.....	36	8	44
Traces (wheel).....	63	.....	.....	63	.....	63
“ (lead)	57	.....	.....	57	.....	57
Nose-bags	57	19	.....	76	58	124
<i>Camp and Garrison Equipage.</i>						
Wall tents.....	576	.....	192	384	797	1,181
“ “ flies	484	.....	146	238	797	1,025
“ “ poles—uprights	926	.....	192	734	1,596	2,340
“ “ “ —ridge	461	.....	88	373	797	1,170
Tent pins.....	4,400	.....	1,800	2,600	10,400	13,000
Camp kettles.....	901	.....	68	833	68	901

STATEMENT—Concluded.

Articles.	On hand in the State Arsenal Nov. 15, 1886.	Received from all sources during the year.	Issued, expended, dropped and sold during the year.	On hand in the State Arsenal Nov. 15, 1887.	In possession of the National Guard.	Total to be accounted for.
<i>Camp and Garrison Equipage—Continued.</i>						
Mess-pans.....	1,000	.....	86	914	86	1,000
Tea spoons.....	.....	.....	.....	.....	75	75
Tin plates.....	835	.....	.....	835	75	910
Tin cups.....	625	.....	.....	625	125	750
Boilers .....	.....	.....	.....	2	.....	2
Knives and forks .....	.....	.....	.....	.....	60	60
Axes (felling).....	.....	.....	.....	3	1	4
Baskets.....	52	.....	.....	52	.....	52
Water barrels.....	.....	.....	.....	9	.....	9
<i>Clothing.</i>						
Overcoats (infantry).....	2,189	.....	1,851	338	3,669	4,007
“ (artillery).....	.....	425	425	.....	425	425
Blankets (Brown O. N. G.).....	.....	990	574	416	574	990
Blankets (grey).....	109	213	97	225	2,896	3,121
Blouses (new).....	12	1,972	1,960	24	5,280	5,304
Pants (new).....	2	2,179	2,181	.....	5,400	5,400
Caps (new).....	7	1,948	1,936	19	5,380	5,399
Blouses (condemned).....	.....	.....	.....	70	.....	70
Pants.....	.....	.....	.....	91	.....	91
Caps.....	.....	.....	.....	45	.....	45
<i>Miscellaneous.</i>						
Brace.....	1	.....	.....	1	.....	1
Bits.....	1	3	.....	4	.....	4
Chisel.....	1	1	.....	2	.....	2
Drawing knife.....	1	.....	.....	1	.....	1
Garrison flag.....	1	.....	.....	1	.....	1
Hand-saws	1	1	.....	2	.....	2
Hatchets	2	.....	.....	2	.....	2
Jack screws.....	4	.....	.....	4	.....	4
Lathe.....	1	.....	.....	1	.....	1
Oil cans.....	9	.....	.....	9	.....	9
Planes.....	3	.....	.....	3	.....	3
Stoves.....	2	.....	.....	2	.....	2
Scales (platform).....	3	.....	.....	3	.....	3
“ (counter).....	1	.....	.....	1	.....	1
Shovels.....	9	.....	.....	9	.....	9
Scythes	6	.....	.....	6	.....	6
Sickles	5	.....	.....	5	.....	5
Vises (iron).....	3	.....	.....	3	.....	3
“ (wood).....	1	.....	.....	1	.....	1

REPORT OF SUPERINTENDENT OF STATE HOUSE.

To His Excellency, J. B. FORAKER, Governor of Ohio:

SIR: I have the honor to submit the following report as Superintendent of the State House and Grounds:

ROSTER OF STATE HOUSE EMPLOYES.

Henry A. Axline.....	<i>Adjutant-General, and Superintendent of State House and Grounds.</i>
James D. Harris.....	<i>Superintendent of Laborers.</i>
Timothy D. McGillicuddy	<i>Engineer.</i>
Benjamin Priest.....	<i>Assistant Engineer and Fireman.</i>
Charles H. Durfey.....	<i>Fireman.</i>
Edward D. Baker.....	<i>Visitors' Attendant.</i>
Silas Crowell	<i>Janitor of Flag room.</i>
James S. Armstrong.....	<i>Day Policeman.</i>
James S. Tyler	<i>Night Policeman.</i>
Andrew Diehl.....	<i>Regular Laborer.</i>
L. P. Latterner	"
Patrick Brennan.....	"
William Alexander.....	"
John North.....	<i>Extra Laborer.</i>
Louis Kaemmerer	"
Hugh Jones.....	"
John H. Bellair.....	<i>Messenger and Janitor.</i>
L. E. Decker.....	<i>Armorer and Guard at State Arsenal.</i>

FUEL.

After advertising for sealed proposals for fuel, as the law directs, bids for furnishing coal for the State House were received and opened.

The contract was awarded to The Brush Creek Coal Company, of Columbus, the lowest bidder, at \$1.79 per ton, delivered in the basement.

LEGISLATIVE HALLS.

The Senate Chamber and the Hall of House of Representatives have been thoroughly cleaned and painted, and put in good condition for use by the next General Assembly.

The carpet in the Hall of the House of Representatives is badly worn and should be replaced with a new one.

Improvements in the water-closets of the House, similar to those made in the Senate last year, should be provided for.

Col. Fred. Blankner, Third Assistant Sergeant-at-Arms of the House, who is charged by law with the direct care of the Legislative Halls, de-

serves great credit for the tact and skill he has manifested in the discharge of his duties.

CONDITION OF STATE HOUSE AND GROUNDS.

The condition of the State House and grounds has been much improved during the year.

The corridors and halls have been scrubbed and scrupulously cleaned daily, and all repairs made necessary from natural wear and breakage have been promptly made.

The basement and heating apparatus have been well cared for and kept in good condition, and the grounds have been improved by sodding, fertilizing and planting additional trees.

All the employes have been faithful and industrious in the discharge of their respective duties, and deserve the fullest credit for the condition of the property intrusted to their care.

The reports of T. D. McGillicuddy, Engineer, J. D. Harris, Superintendent of Laborers, and Silas Crowell, Janitor of Flag room, are herewith submitted.

REPORT OF ENGINEER.

ADJUTANT-GENERAL'S DEPARTMENT, OFFICE OF ENGINEER OF STATE HOUSE,

COLUMBUS, O., *November 15, 1887.*

To General H. A. Axline, Adjutant-General State of Ohio:

SIR: I have the honor to submit the following report of the heating department of the State House for the fiscal year, ending November 15th, 1887:

The heating department has been administered in as economical a manner as was possible for the convenience and comfort of all in the State House.

The heating apparatus, gas and water pipes, sewerage and ventilation in and about the State House are in as good condition as is possible under existing circumstances.

According to my instructions when taking charge of the heating department, my assistant, Benjamin Priest, and myself have made the repairs and improvements, as far as it was possible for us to do, and I have endeavored to keep an accurate account of the cost of same during the year just closed, and find it aggregates \$350.

The coal consumed for the heating season of 1886-7 was 736 tons; for the corresponding season of 1885-6, 788 tons; a saving of fifty-two tons.

The kindling used for 1886-7 was seventeen loads, and 1885-6, fifty-one loads; a net saving in both items to the State of \$155.10.

At the close of the heating season, May 15th, I had the heating chambers of

the State House thoroughly cleaned and whitewashed, also the lower basement and engineer's office.

I had the necessary repairs made on furnaces, placed "buck stays" on each of the batteries near the boiler front to support the walls and protect the same from the action of the heat of the furnaces.

I had an expansion joint placed in large steam-pipe connecting batteries, to protect the joints and prevent leaking.

I have changed the water supply for boilers; heretofore the water pipes extended along the furnace and basement walls, half the length of the boilers; from there it was carried up to the top and there through check and regulating valves admitted to the boilers. I have changed this to the front of boilers, between the breeching and furnace doors, to check and regulating valves, and then to top of boilers and admitted as before; a labor saving to firemen in regulating water supply at top of boiler.

I have placed an arrangement of our own make on water cylinder of supply pump, so that I can introduce crude petroleum to boilers; this is to prevent incrustation of lime and other impurities of the water and to save the piping in steam coils from rusting out; it also serves as a lubricator to water cylinder.

I have had doors placed on openings to cold air chambers to store the heat and protect the steam pipes in heating chambers when steam is off the house; during severe cold weather I have these doors closed before steam goes down in the evening and opened as soon as heat is on in the morning. By this improvement a saving of several hours labor daily to firemen is had, about ten per cent. in fuel, besides keeping the building comfortably warm through the night.

I have made some changes in the northwest cold air chamber, which has proved a great benefit to all rooms heated from the air of this chamber. There are six cold air chambers in the basement of the State House, situated as follows: two each in the north, west and south fronts of the building, for the admission of pure air from outdoor to heating chambers.

There should be some arrangement for forcing cold air through to heating chamber, either by a fan or blower worked by steam or water motor. Ordinarily the air flows through naturally to heating chambers, but when the wind is from the side opposite to the cold air chambers, the air is, if anything, driven away or is so inactive as not to flow to heating chambers; consequently very little, if any, heat in rooms supplied from these chambers.

With the improvement suggested there would be a full supply of pure hot air in winter and cold in summer to all rooms in the State House.

I again renew my recommendation for the return traps to the twenty-one coils now in use in the State House. I do so on the score of economy in fuel and general repairs on return piping.

It is utterly impossible to keep the return piping in perfect repair so long as water and steam, at boiler pressure, are circulating through and fighting each other in the return piping.

Thirty years' experience as a steam user teaches me that it was a great mistake in having the traps removed. The traps can be bought for \$525, and the setting and connecting we can do.

I desire to call special attention to the importance of providing some means for the consumption of the smoke from the furnaces in the State House. It must be apparent to all that the great volume of black smoke that escapes from the stacks is an injury to the building and a great nuisance to the citizens living in the vicinity of the State House.

I have for years watched the workings of many of the devices of the day for that purpose, and have used some of them, and am satisfied there are some in the market that will accomplish the work desired.

For the comfort and convenience of the State officers and attaches of the State House, I would recommend that the heating season be made from October 15th to May 15th each year, instead of from November 15th to May 15th, and that the necessary appropriation be made to meet the additional expense.

My reason for making this recommendation is based on the fact that this year we were compelled to commence heating the building on September 24th, and continued to do so almost daily since that time.

In my report last year I recommended, on the score of economy, the retaining of one or both of the firemen throughout the year, instead of six months, as is now the law. I again most respectfully renew the recommendation for the same reason, that is, to assist in making repairs and caring for the basement under the direction of the engineer.

My assistant, Benjamin Priest, and fireman, Charles H. Durfey, are exemplary men and valuable assistants in any work undertaken in the department.

Very respectfully your obedient servant,

T. D. MCGILLICUDDY,
Engineer State House.

REPORT OF SUPERINTENDENT OF LABORERS.

ADJUTANT-GENERAL'S DEPARTMENT, OFFICE OF SUP'T OF LABORERS,

COLUMBUS, O., November 15, 1887.

To General H. A. Axline, Adjutant-General and Superintendent of State House—

SIR: I have the honor to submit the following report, as superintendent of laborers:

The walls of the rotunda, from the height of forty feet from the floor to the sky-light, have been washed and cleaned; the glass in the sky-light was cleaned, and new glass provided where the old was unsafe. The walls of the space between the sky-light and the roof were repainted, thereby improving the light.

The walls of the dome have been repaired and whitewashed throughout.

The pulleys of most all the windows in the building were worn out and had to be replaced with new ones.

A new tin-roof was required in place of the old one, which was worn out, over the stairway leading from the hallway to the rooms occupied by the Roster clerks.

Two new chimney tops were placed over the State Library and the office of the Auditor of State.

The main roof was repaired in several places during the year.

Covers constructed of lumber were placed over the iron-grates, and the broken glass was replaced with new, in the esplanade.

The iron gates have been overhauled and are now in a good condition.

The two field pieces (cannon) and all the lamp-posts have been repainted.

Several doors have been repaired and the locks and springs placed in working order.

Over one hundred and fifty loads of manure have been spread over the lawn, which has been kept in good condition considering the dry season.

One large elm and twelve fine Norway maple trees were planted in the square.

The ceilings of the Senate chamber and the hall of the House of Representatives were repaired, the plastering being very defective in each, especially the hall of the House of Representatives.

The iron railing in the Senate chamber was repaired and new fixtures placed in the Senate wash-room.

The iron sink in the wash-room adjoining the Senate chamber was rusted out and has been replaced with a new one.

The ceiling and walls of the relic room on the third floor over the west entrance have been cleaned and repainted, and are now in good condition.

The day and night policemen, visitors' attendant, janitor of the flag-room, and the laborers, have rendered good service, being attentive to their duties and obliging to the visiting public.

I am, very respectfully, your obedient servant,

JAMES D. HARRIS,
Superintendent of Laborers.

APPROPRIATION AND EXPENDITURES OF STATE HOUSE AND GROUNDS.

For what purpose required.	Balance Nov. 15, 1886.	Appropriation, 1887.	Expenditures.	Balance Nov. 15, 1887.
Salary superintendent laborers	\$225 00	\$900 00	\$900 00	\$225 00
“ one engineer	250 00	1,000 00	1,000 00	250 00
“ two firemen (six months)	450 00	900 00	900 00	450 00
“ janitor flag-room	180 00	720 00	720 00	180 00
“ visitors' attendant	180 00	720 00	720 00	180 00
“ day policeman	180 00	720 00	720 00	180 00
“ night policeman	200 00	800 00	800 00	200 00
“ four regular laborers	628 00	2,500 00	2,500 00	628 00
Extra labor	1 71	2,944 00	2,490 00	455 71
Material and repairs	81 56	2,399 54	2,481 10	420 71
Fuel for State House	929 92	1,800 00	1,554 27	1,175 65
Water rent .....	.....	1,000 00	500 00	500 00
Care and repair heating apparatus	102 85	1,081 50	1,163 13	21 22
Two new closets for Senate and repairing old	190 40	.....	161 71	28 69

REPORT OF JANITOR OF FLAG-ROOM.

The following resolution is published, as required by law:

JOINT RESOLUTION

Giving the Adjutant-General care and control of the Flag-room, flags and other relics deposited therein.

Resolved by the General Assembly of the State of Ohio, That the Flag-room in the State House, and the flags and other relics deposited therein, shall hereafter be under the care and control of the Adjutant-General; and he is hereby authorized and instructed, on application, in writing, of the President and Secretary of any Association composed of members of any Regiment or Battery of this State, having flags deposited in said room, to deliver to any such Association the stands of colors of any such Regiment or Battery, to be used only at the general meetings or reunions of such Association, and for no other purpose, to be returned by such officers within thirty days after said meetings or reunions to said Adjutant-General; and on failure to return any stand of colors obtained under the provisions of this resolution, all further rights and privileges of such Regiment or Organization so failing to return such flags or standards under the same, shall be forfeited. The Adjutant-General shall publish in his report annually, this resolution, and a list of flags on deposit, and if withdrawn, for what purpose, and by what Association; and he is also authorized and directed to procure suitable cases for the Flag-room, in which said flags may be placed for the purpose of preserving the same.

Adopted April 24, 1877. [O. L., Vol. 74, page 538].

LIST OF FLAGS ON DEPOSIT IN FLAG-ROOM, Nov. 15, 1887.

Infantry.	National.	Banners.	Markers.	Total.
First Regiment.....	1	.....	1	2
Second Regiment.....	2	1	.....	3
Third Regiment.....	1	.....	.....	1
Fourth Regiment.....	1	1	.....	2
Fifth Regiment.....	2	.....	.....	2
Eighth Regiment.....	1	1	.....	2
Ninth Regiment.....	.....	1	.....	1
Tenth Regiment.....	1	1	.....	2
Eleventh Regiment.....	1	1	.....	2
Twelfth Regiment.....	1	1	.....	2
Thirteenth Regiment.....	1	1	.....	2
Fourteenth Regiment.....	2	1	.....	3
Fifteenth Regiment.....	3	.....	.....	3
Sixteenth Regiment.....	1	2	.....	3
Seventeenth Regiment.....	2	1	.....	3
Eighteenth Regiment.....	2	2	.....	4
Nineteenth Regiment.....	1	.....	.....	1
Twentieth Regiment.....	2	2	.....	4
Twenty-first Regiment.....	1	1	.....	2
Twenty-second Regiment.....	1	1	.....	2
Twenty-third Regiment.....	2	2	.....	4
Twenty-fourth Regiment.....	1	1	.....	2
Twenty-fifth Regiment.....	2	2	.....	4
Twenty-sixth Regiment.....	4	1	.....	5
Twenty-seventh Regiment.....	2	.....	.....	2
Twenty-eighth Regiment.....	1	1	.....	2
Thirtieth Regiment.....	2	2	.....	4
Thirty-first Regiment.....	2	1	.....	3
Thirty-second Regiment.....	1	1	.....	2
Thirty-third Regiment.....	2	2	.....	4
Thirty-fourth Regiment.....	.....	1	.....	1
Thirty-fifth Regiment.....	.....	1	.....	1
Thirty-sixth Regiment.....	2	1	.....	3
Thirty-seventh Regiment.....	.....	1	.....	1
Thirty-eighth Regiment.....	1	.....	.....	1
Thirty-ninth Regiment.....	1	1	.....	2
Fortieth Regiment.....	1	.....	2	3
Forty-first Regiment.....	2	1	4	7
Forty-second Regiment.....	1	1	.....	2
Forty-third Regiment.....	1	1	.....	2
Forty-fourth Regiment.....	1	1	.....	2
Forty-fifth Regiment.....	3	2	2	7
Forty-sixth Regiment.....	2	2	.....	4
Forty-seventh Regiment.....	2	1	.....	3
Forty-eighth Regiment.....	1	.....	.....	1
Forty-ninth Regiment.....	2	.....	.....	2
Fiftieth Regiment.....	1	.....	.....	1
Fifty-first Regiment.....	2	.....	.....	2
Fifty-second Regiment.....	1	1	.....	2
Fifty-third Regiment.....	1	.....	.....	1
Fifty-fourth Regiment.....	.....	1	.....	1
Fifty-fifth Regiment.....	1	1	.....	2
Fifty-sixth Regiment.....	1	1	.....	2
Fifty-seventh Regiment.....	2	.....	.....	2
Fifty-eighth Regiment.....	2	1	.....	3
Fifty-ninth Regiment.....	2	1	.....	3
Sixtieth Regiment.....	2	2	2	6
Sixty-first Regiment.....	2	1	.....	3
Sixty-second Regiment.....	.....	2	.....	2
Sixty-third Regiment.....	1	1	.....	2

LIST OF FLAGS ON DEPOSIT IN FLAG-ROOM—Continued.

Infantry.	National.	Banners.	Markers.	Total.
Sixty-fourth Regiment	2	1	.....	3
Sixty-fifth Regiment.....	2	1	.....	3
Sixty-sixth Regiment	2	.....	.....	2
Sixty-seventh Regiment.....	1	1	.....	2
Sixty-eighth Regiment.....	1	1	.....	2
Sixty-ninth Regiment.....	1	1	.....	2
Seventieth Regiment.....	1	1	.....	2
Seventy first Regiment.....	1	1	2	4
Seventy-second Regiment	1	.....	.....	1
Seventy-third Regiment....	2	.....	.....	2
Seventy-fourth Regiment.....	1	1	.....	2
Seventy-sixth Regiment.....	1	1	.....	2
Seventy-seventh Regiment	1	1	.....	2
Seventy-eighth Regiment	1	1	.....	2
Eightieth Regiment.....	1	1	1	3
Eighty-first Regiment.....	2	2	.....	4
Eighty-second Regiment	1	1	.....	2
Eighty-fourth Regiment.....	1	.....	.....	1
Eighty-sixth Regiment.....	.....	1	.....	1
Eighty-eighth Regiment	1	1	2	4
Eighty-ninth Regiment	2	.....	.....	2
Ninetieth Regiment.....	1	.....	.....	1
Ninety-first Regiment.....	1	1	.....	2
Ninety-second Regiment	1	1	.....	2
Ninety-third Regiment.....	1	1	.....	2
Ninety-fourth Regiment.....	1	1	1	3
Ninety-fifth Regiment.....	2	1	2	5
Ninety-sixth Regiment.....	2	2	.....	4
Ninety-seventh Regiment	1	1	.....	2
Ninety-eighth Regiment	1	1	.....	2
One Hundredth Regiment ..	1	1	.....	2
One Hundred and First Regiment	1	.....	.....	1
“ Second Regiment.....	1	.....	.....	1
“ Third Regiment.....	1	.....	.....	1
“ Fourth Regiment.....	1	.....	.....	1
“ Fifth Regiment....	2	.....	.....	2
“ Sixth Regiment... ..	1	1	.....	2
“ Seventh Regiment.....	1	1	2	4
“ Eighth Regiment.....	1	1	.....	2
“ Tenth Regiment.....	1	1	.....	2
“ Eleventh Regiment.....	1	1	.....	2
“ Thirteenth Regiment.....	2	2	.....	4
“ Fourteenth Regiment....	2	1	.....	3
“ Fifteenth Regiment.....	1	1	.....	2
“ Sixteenth Regiment.....	1	1	.....	2
“ Eighteenth Regiment....	2	1	.....	3
“ Twentieth Regiment.....	1	1	.....	2
“ Twenty-first Regiment....	2	2	.....	4
“ Twenty-second Regiment	2	1	.....	3
“ Twenty-third Regiment..	1	.....	.....	1
“ Twenty-fourth Regiment..	1	.....	.....	1
“ Twenty-fifth Regiment....	1	1	2	4
“ Twenty-sixth Regiment...	1	1	1	3
“ Twenty-eighth Regiment	1	1	.....	2
“ Fifty-fifth Regiment.....	.....	1	.....	1
“ Seventy-third Regiment...	.....	1	.....	1
“ Seventy-fourth Regiment..	1	2	.....	3
“ Seventy-fifth Regiment...	1	1	.....	2
“ Seventy-sixth Regiment...	1	1	.....	2
“ Seventy-seventh Reg't....	1	.....	.....	1

LIST OF FLAGS ON DEPOSIT IN FLAG-ROOM—Continued.

Infantry.	National.	Banners.	Markers.	Total.
One Hundred and Seventy-eighth Regiment	1	1	.....	2
“ Seventy-ninth Regiment..	1	1	1	3
“ Eightieth Regiment.....	1	1	.....	2
“ Eighty-first Regiment.....	.....	1	.....	1
“ Eighty-second Regiment..	1	1	.....	2
“ Eighty-third Regiment....	1	1	.....	2
“ Eighty-fourth Regiment..	1	1	.....	2
“ Eighty-fifth Regiment....	1	.....	.....	1
“ Eighty-sixth Regiment....	1	1	2	4
“ Eighty-eighth Regiment...	1	1	1	3
“ Eighty-ninth Regiment...	1	1	.....	2
“ Ninety-first Regiment.....	1	1	.....	2
“ Ninety-second Regiment..	1	1	2	4
“ Ninety-third Regiment....	1	1	.....	2
“ Ninety-fourth Regiment...	1	1	1	3
“ Ninety-fifth Regiment....	1	1	.....	2
“ Ninety-sixth Regiment....	1	1	2	4
“ Ninety-seventh Regiment	1	1	.....	2
Total, 138 Regiments.....	172	125	33	330

Cavalry.	National.	Banners.	Markers.	Total.
First Regiment .....	.....	1	.....	1
Second Regiment .....	.....	1	.....	1
Third Regiment.....	.....	.....	1	1
Fourth Regiment .....	.....	1	.....	1
Fifth Regiment.....	1	1	.....	2
Sixth Regiment.....	.....	1	.....	1
Ninth Regiment.....	2	1	1	4
Tenth Regiment, eagle from top of staff.. ....	.....	.....	.....	.....
Eleventh Regiment.....	.....	1	1	2
Twelfth Regiment.....	.....	1	2	3
Thirteenth Regiment.....	.....	1	2	3
11 Regiments	3	9	7	19

Independent Batteries.	National.	Banners.	Markers.	Total.
First Independent Battery.....	.....	1	.....	1
Sixth Independent Battery.....	.....	.....	1	1
Seventh Independent Battery.....	1	.....	.....	1
Twelfth Independent Battery.....	.....	.....	1	1
Fourteenth Independent Battery.....	.....	.....	1	1
Fifteenth Independent Battery.....	1	.....	.....	1
Sixteenth Independent Battery.....	.....	.....	1	1
Twenty-second Independent Battery.....	.....	.....	1	1
Twenty-Fifth Independent Battery.. ....	.....	.....	1	1
9 Independent Batteries.....	2	1	6	9

LIST OF FLAGS ON DEPOSIT IN FLAG-ROOM—Continued.

First Light Atillery.	National.	Banners.	Markers.	Total.
Battery B	1	.....	.....	1
Battery C .....	.....	.....	2	2
Battery H .....	.....	.....	1	1
3 Batteries	1	.....	3	4
Heavy Artillery.	National.	Banners.	Markers.	Total.
First Heavy Artillery	1	1	.....	2
Second Heavy Artillery.....	1	1	.....	2
2 Regiments Heavy Artillery	2	2	.....	4
Unknown Banners and Markers.	National.	Banners.	Markers.	Total.
Unknown .....	.....	4	11	15
Colored troops (Infantry).	National.	Banners.	Markers.	Total.
Fifth United States	1	.....	.....	1
Twenty-seventh United States.....	.....	1	2	3
2 Regiments Colored troops	1	1	2	4
Flags of Mexican War (Infantry).	National.	Banners.	Markers.	Total.
Second Regiment	1	.....	.....	1
Third Regiment.....	1	.....	.....	1
Capt. Hamilton, flag used at Monterey, 1846..	1	.....	.....	1
Unknown	1	.....	.....	1
Mexican war	4	.....	.....	4
Signal Flag.	National.	Banners.	Markers.	Total.
16th Army Corps	1	.....	.....	1

LIST OF FLAGS ON DEPOSIT IN FLAG-ROOM—Continued.

	National.	Banners.	Markers.	Total.
Black Brigade of Cincinnati	1	.....	.....	1

	National.	Banners.	Markers.	Total.
Ohio Headqr's at Philadelphia (Centennial) ..	2	.....	.....	2

	National.	Banners.	Markers.	Total.
4th Kentucky Mounted Infantry	1	.....	.....	1

	National.	Banners.	Markers.	Total.
Flag used at obsequies of President James A. Garfield, at Cleveland, O	1	.....	.....	1

Headquarters Flag.	National.	Banners.	Markers.	Total.
1st Brigade, 2d Division, Army of West Vir- ginia; property of ex-President R. B. Hayes	1	.....	.....	1

	National.	Banners.	Markers.	Total.
Columbus Cadets, 1874	1	1	.....	2

RECAPITULATION.

	National.	Banners.	Markers.	Total.
138 Regiments of Infantry.....	172	125	33	330
11 Regiments of Cavalry	3	9	7	19
9 Independent Batteries.....	2	1	6	9
3 Batteries, B, C and H, Light Artillery	1	.....	3	4
2 Regiments Heavy Artillery.....	2	2	.....	4
Unknown Banners and Markers .....	.....	4	11	15
2 Regiments Colored Troops	1	1	2	4
Flags, Mexican War.....	4	.....	.....	4
Signal Flag	1	.....	.....	1
Black Brigade of Cincinnati	1	.....	.....	1
Centennial Flags	2	.....	.....	2
4th Kentucky Mounted Infantry.....	1	.....	.....	1
Flag used at obsequies late Pres. Garfield	1	.....	.....	1
Headquarters Flag	1	.....	.....	1
Columbus Cadets, 1874.....	1	1	.....	2
Totals	193	143	62	398

FLAGS WITHDRAWN AND USED DURING THE YEAR.

Regiments.	N.	B.	M.	Remarks.	Sent out.	Returned
					1886.	1886.
Infantry, 95th.....	2	1	.....	J. H. Rees, Columbus.....	Dec. 15	Dec. 17.
" 30th	2	.....	.....	W. L. Retilly, New Philadelphia	1887.	1887.
" 51st	2	.....	.....		May 18	May 21.
" 52d	1	.....	.....	
" 80th	1	.....	.....	
" 98th	1	.....	.....	
" 126th	1	.....	.....	L. Tressel, Lucas.....	June 4	June 10.
" 120th	1	1	.....		Aug. 2	Aug. 9.
" 66th	2	.....	.....	T. Keller, Urbana.....	" 2	" 9.
" 31st	2	1	.....	J. C. Walker, Springfield.....	" 6	" 22.
" 47th	2	1	.....	R. D. Shields, Blanchester.....	" 12	" 27.
" 121st	2	2	.....	Wm. H. Jewett, Plain City	" 15	" 24.
" 115th	1	1	.....	J. J. Clark, Canton.....	" 15	" 21.
" 64th	2	1	.....	Jacob Babst, Crestline	" 16	" 24.
" 65th	1	1	.....		" 17	" 21.
Battery, 6th .....	.....	.....	1	J. Lawrence, Canal Fulton	" 22	Sept. 1.
Infantry, 104th	1	.....	.....	J. H. Rees, London.....	" 22	Oct. 11.
" 95th	2	1	.....	D. K. Allen, Martin's Ferry...	" 23	" 13.
" 50th	1	.....	.....	T. R. Mason, Warsaw.....	" 25	Sept. 1.
" 177th	1	.....	.....	Dr. G. L. Anderson, Bellaire...	" 25	" 3.
" 126th	1	1	.....	J. Van Nest, Tiffin.....	" 26	" 1.
" 101st	1	.....	.....	C. A. Cable, Nelsonville.....	" 26	" 3.
" 18th	2	2	.....	E. C. Palmer, Republic..	" 26	" 30.
" 25th	2	2	.....	O. Sells, Hilliard	" 27	" 5.
Cavalry, 12th.....	.....	1	2	M. D. Waters, Westerville.....	" 24	" 29.
" 13th .....	.....	.....	3	J. C. Truesdell, Fredericktown	" 29	" 2.
Infantry, 96th.....	2	2	.....	E. L. Viers, Liberty Center....	" 30	Aug. 30.
" 68th	1	1	.....	Gen. J. S. Robinson, Kenton	" 31	" 31.
" 82d	1	1	.....		Sept. 5	Sept. 13.
" 61st	1	1	.....	W. W. Peterson, Piqua.....	" 5	" 13.
" 24th	1	1	.....	W. Bells, Piqua.....		
" 32d	1	1	.....	T. W. Connelly, Manchester..	Sept. 10	Sept. 27.
" 1st	1	.....	.....	
" 11th	1	1	.....		
" 24th	1	1	.....		
" 33d	1	1	.....		
" 39th	1	1	.....	R. F. McDonald, Leipsic.....	Sept. 12	Sept. 17.
" 70th	1	1	.....		" 12	" 17.
" 91st	1	1	.....		" 14	" 19.
" 173d ....	.....	1	.....		" 14	" 24.
" 182d	1	1	.....		" 17	" 28.
" 191st	1	1	.....	Dr. B. A. Thomas, Rushville...	" 17	" 28.
" 21st	1	1	.....	H. C. Stewart, Cincinnati.....	" 17	" 27.
" 62d .....	.....	2	.....	T. Henderson, West Salem	" 19	" 21.
" 48th	1	.....	.....	G. A. Ewing, Jackson	" 19	" 22.
" 41st	2	.....	.....	H. C. Miller, "	" 19	" 26.
" 56th	1	1	.....	E. L. Walker, Athens.....	" 20	" 23.
H'y Artillery, 1st....	1	1	.....		" 20	Oct. 4.
Infantry, 92d.....	1	1	.....	C. K. Herick, Canal Winchester	" 20	" 4.
" 116th.....	1	1	.....	T. J. McNaughten, Pleasantv'll	Oct. 3	" 6.
" 113th	2	.....	.....	O. Guthrie, Shiloh.....	" 4	" 6.
" 17th.....	1	1	.....	S. F. Robinson, Ashley.....	" 4	" 10.
1st Ind. Battery ....	.....	1	.....	D. H. Moore, Hamden Junc'tn..		
Infantry, 26th.....	4	1	.....	T. Martin, "		
" 27th	2	.....	.....	O. Sykes, Chicago Junction....		
" 30th	2	.....	.....	Benj. Priest, Columbus.....		
" 123d	1	.....	.....	J. Tobias, Covington.....		
" 3d	1	.....	.....	
" 91st	1	1	1			

FLAGS WITHDRAWN AND USED DURING THE YEAR—Continued.

Regiments.	N.	B.	M.	Remarks.	Sent out.	Returned
Infantry, 81st	2	2	.....	H. M. Dupay, Greenfield.....	Oct. 5	Oct. 10.
" 180th.....	1	1	.....	E. B. Weirick, Columbus.....	" 11	" 14.
" 59th.....	2	1	.....	Charles McMath, Moscow.....	Sept. 28	" 14.
Ind. Battery, 7th...	1	.....	.....	Geo. Joachin, Pomeroy.....	Oct. 3	" 14.
Infantry, 118th.....	2	.....	.....	N. T. Moore, Forest.....	" 10	" 15.
" 2d	1	1	.....	C. H. Deckert, Middletown....	Sept. 19	" 27.
" 70th	1	1	.....	J. W. Metz, Aberdeen.....	Oct. 18	Nov. 1.
" 105th ...	2	.....	.....	G. T. Perkins, Akron.....	" 7	" 7.
Total	84	49	7	140.		

DEDICATION OF MONUMENTS AT GETTYSBURG, PA.

Infantry, 4th	1	1	} To Gen. H. A. Axline	Sept. 10	Sept. 19
" 5th	2	.....	.....	
" 8th	1	1	.....		
" 25th	1	1	.....		
" 55th	1	1	.....		
" 61st	2	2	.....		
" 66th	2	.....	.....	
" 73d	2	.....	.....	
" 82d	1	1	.....		
" 107th.....	1	1	.....		
Cavalry, 1st.....	1	}		
" 6th .....	.....	.....	1	
Battery H.....	.....	.....	1	
Total	14	8	3	25.		

One hundred and forty flags, banners and markers were withdrawn for reunions, and twenty-five flags, banners and markers were sent to Gettysburg to the dedication of the "Gettysburg Memorials" and reunions. All have been returned in good order.

I would suggest that a system be established, to be used during the National Encampment of the G. A. R., to be held in Columbus, 1888, for loaning of the flags to the different Regimental organizations for reunions, and to be carried in procession, to insure their safe return to the Flag-room.

The walls of the Relic-room have been cleansed and painted, and the room is now in good condition. The relics are increasing in number, and more cases will be needed in the near future that they may be properly displayed. The walls of the Flag-room need cleaning, and gas-jets placed between the cases, that the flags may be seen to better advantage.

The visitors' register shows 16,720 names, about one-third the number of visitors during the year.

Respectfully submitted.

SILAS CROWELL,
Janitor Flag-room.

ROSTER OF OHIO SOLDIERS.

PUBLICATION.

On the thirteenth day of May, 1887, the Board, charged with the publication of the Roster of Ohio Soldiers, consisting of the Commissioners of Public Printing and the Adjutant-General, awarded the contract for printing, binding and delivering at the Adjutant-General's office, Volumes IV, V and VI of the Roster, according to specifications furnished, to The Werner Printing and Manufacturing Company, of Akron, Ohio, at seventy-nine cents per volume, that company being the lowest bidder.

Under said contract ten thousand copies each of Volumes IV and V, have already been delivered. These books are fully equal in workmanship to the requirements of the specifications furnished.

The full edition of these volumes contracted for will cost the State the sum of \$23,700, leaving a balance of \$6,300 out of the \$30,000 appropriated for this work.

PREPARATION OF COPY.

This work has been vigorously pushed forward during the year, although the obstacles in the way of producing a complete record of individual soldiers are many. The work performed by the clerks in the Roster Department is certainly creditable to their skill and industry.

The most difficult part of the work has been accomplished in the preparation of the veteran regiments of infantry, which concluded with the eighty-second.

For this reason the work will hereafter advance much more rapidly, and the material for at least five more volumes can be prepared during the year without increasing the clerical force now on duty.

DISTRIBUTION.

The following table will show the distribution and sale of books during the year:

Volume.	No. copies on hand Nov. 15, 1886, and received during year ending Nov. 15, 1887.	No. copies distributed, as provided by law.	No. copies sold, at \$1.00 per copy.	Total.	No. copies remaining on hand Nov. 15, 1887.
II.	8,427	5,336	134	5,470	2,957
III.	10,000	5,344	85	5,429	4,571
IV.	10,000	5,106	69	5,175	4,825
V.	4,650	5	3	8	4,642
	33,077	15,791	291	16,082	16,995

The report of the Chief Clerk, Mr. J. W. Knox, which gives a full statement of the transactions of the Roster Department, is herewith submitted :

REPORT OF ROSTER DEPARTMENT.

COMMISSION :

JOSEPH B. FORAKER, Governor.

JAMES S. ROBINSON, Secretary of State.

HENRY A. AXLINE, Adjutant-General.

Clerks.

*J. W. Knox, Chief Clerk.....Belmont county.

William L. Retilley, Clerk.....Coshocton “

Ed. H. Archer, “Noble “

E. G. Donaldson, “Franklin “

John W. King, “Brown “

Elmer A. Palmer, “Henry “

Graham Deuwell, “Clarke “

Wm. F. Madden, “Richland “

†Fred. W. Snell, “Franklin “

‡C. H. Moore, “Preble “

||Frank J. Bridwell, “Highland “

Since the last report but few changes have been made in the clerical force of this department.

Mr. Charles S. McCormick, who was chief clerk at the time of the last report, owing to failing health resigned April 15, 1887, and died at his home at Niles, Ohio, May 27, 1887.

* Appointed April 15, 1887, vice C. S. McCormick, resigned.

† Appointed March 1, 1887.

‡ Appointed June 21, 1887.

|| Appointed August 1, 1887.

By the death of Mr. McCormick this office lost one of its most valued and efficient members, he being a practical printer and writer, courteous, obliging and a gentleman respected and loved by all who knew him.

During the last year missing records from the thirtieth to the seventy-ninth regiments, inclusive, have been obtained from the War Department at Washington, in some instances reaching as high as eight hundred names in a single regiment, besides quite a number of entre company muster-out rolls.

Arrangements have already been made by the Roster Commission with the officials of the War Department at Washington, to furnish the records of Ohio Soldiers in the Mexican War, which can be secured and published as soon as the Roster of Ohio Soldiers in the War of the Rebellion is completed.

On the 15th day of January, 1887, Volume III, containing from the twenty-first to the thirty-sixth regiments, inclusive, was issued by the Ohio Valley Publishing and Manufacturing Company, of Cincinnati, as per contract, mentioned in report of last year.

The contract for publishing volumes IV, V and VI, an edition of ten thousand copies each, was awarded to The Werner Printing and Manufacturing Company, of Akron, Ohio, on the tenth day of May, 1887, at the remarkably low price of seventy-nine cents per volume.

Volume IV, containing from the thirty-eighth to the fifty-third regiments, inclusive, was issued August 15, 1887. Volume V, containing from the fifty-fourth to the sixty-ninth regiments, inclusive, October 15, 1887; and Volume VI, which is now being printed, will be issued about the 1st of January, 1888, and will probably contain from the seventieth to the eighty-ninth regiments, inclusive.

We believe now that during the coming year we will be able to complete and print five volumes, which will complete the infantry organizations. The difficulties and embarrassments in the preparation of this work have been fully detailed in previous reports.

Much credit is due the clerks of this department for the patience, skill and industry displayed in the prosecution of this work, and I can see no reason why they should receive less compensation than clerks in other departments of the State House. I would ask that this matter be carefully considered and some action taken whereby the salaries of clerks in this department be equalized with clerks in other departments.

Respectfully submitted.

J. W. KNOX,
Chief Clerk Roster Department.

November 15, 1887.

TO GENERAL H. A. AXLINE,
Adjutant-General.

STATE OF OHIO, ADJUTANT-GENERAL'S DEPARTMENT,
COLUMBUS, O., November 15, 1887.

To the Hon. J. B. FORAKER, Governor of Ohio :

SIR: I have the honor to submit herewith a report of my work as the agent of the State in the settlement of the "war claims" of Ohio against the General Government, growing out of the war of 1861-5 :

August, 1882, I collected and placed in the State Treasury	\$67,674 98
March, 1883.....	70,943 96
August, 1884.....	90,246 92
March, 1885.....	2,152 06
August, 1886	12,590 08
Total collected and placed into the treasury.....	\$243,608 00

During the past fiscal year I received an additional allowance of outstanding accounts amounting to \$38,512.71. This amount was certified to the last Congress by the Secretary of the United States Treasury for an appropriation, was placed in the general deficiency bill, which passed during the last hours of Congress, but failed to receive the approval of the President of the United States.

It is confidently believed that the coming Congress will follow the example of its predecessors and pass early in the session the bill referred to. In this event the State will shortly be reimbursed the additional amount, which will make the total collections made by me \$282,120.71.

I have pending before the department further explanation of outstanding difference, which I have reason to believe will be productive of good results, and bring an additional sum to the State treasury during the coming year.

Respectfully submitted.

W. O. TOLFORD,
Agent Ohio State War Claims.

OFFICE OF CHIEF OF ENGINEERS,
PAINESVILLE, O., *November 15, 1887.*

HON. J. B. FORAKER, *Governor and Commander-in-Chief O. N. G.*—

GOVERNOR: In compliance with section 102, Revised Statutes of Ohio, I have the honor to submit the following report of the Department of Engineers, for the year ending November 15, 1887:

Since my last report, dated October 26, 1886, the services of this department have not been called into requisition; consequently I have nothing of an official nature to report.

Permit me to congratulate you upon the high state of discipline and efficiency to which the National Guard of the State of Ohio have been brought.

Your efforts to that end, so ably seconded by your efficient Adjutant-General, have placed the troops of this State upon a footing equal, if not superior, to those of any State in the country.

I have the honor to be,

Very respectfully, your obedient servant,

J. LACY PIERSON,
Colonel, Chief of Engineers.

GENERAL HEADQUARTERS, STATE OF OHIO,
ADJUTANT-GENERAL'S OFFICE,
COLUMBUS, *February 15, 1887.*

GENERAL ORDERS, }
No. 1. }

The following changes have occurred among the Commissioned Officers of the Ohio National Guard, during the quarter ending February 15, 1887:

COMMISSIONED.

FIRST REGIMENT OF LIGHT ARTILLERY.

Charles E. Johnson, First Lieutenant Battery C, vice Herdman, resigned, with rank from December 3, 1886.

James C. Ogden, First Lieutenant Battery E, vice Colvin, term expired, with rank from January 5, 1887.

Edgar E. Peters, Second Lieutenant Battery E, vice Ogden, promoted, with rank from January 5, 1887.

FIRST REGIMENT OF INFANTRY.

Samuel Bickerstaff, Second Lieutenant Company A, vice Iffland, resigned, with rank from November 3, 1886.

John W. Carroll, Captain Company H, re-commissioned December 3, 1886, with rank from November 14, 1881.

Thomas H. Wright, First Lieutenant Company H, re-commissioned December 3, 1886, with rank from November 14, 1881.

THIRD REGIMENT OF INFANTRY.

Heber A. Ketcham, Chaplain, vice Rhinehart, resigned, with rank from December 22, 1886.

William H. Dunker, Second Lieutenant Company C, vice Webb, promoted, with rank from December 21, 1886.

FIFTH REGIMENT OF INFANTRY.

Edmund M. Whitney, Captain Company B, vice Yonkerman, resigned, with rank from February 14, 1887.

William B. Maxson, Second Lieutenant Company B, vice Bailey, resigned, with rank from February 14, 1887.

Charles X. Zimmerman, First Lieutenant Company F, vice Hayes, resigned, with rank from February 14, 1887.

SEVENTH REGIMENT OF INFANTRY.

William Wagner, Captain Company A, vice Smith, term expired, with rank from February 5, 1887.

William Wagner, First Lieutenant Company A, vice Kirkpatrick, resigned, with rank from November 17, 1886.

Carl K. Mower, First Lieutenant Company A, vice Wagner, promoted, with rank from February 6, 1887.

Charles T. Davis, Second Lieutenant Company A, vice Wagner, promoted, with rank from November 17, 1886.

Lark Moon, First Lieutenant Company E, vice Riggen, resigned, with rank from February 5, 1887.

Marion Van Buskirk, Second Lieutenant Company E, vice Moon, promoted, with rank from February 5, 1887.

EIGHTH REGIMENT OF INFANTRY.

Horace N. Clemens, Captain Company D, vice Ogden, resigned, with rank from November 23, 1886.

Forbes Alcock, Second Lieutenant Company D, vice Clemens, promoted, with rank from November 23, 1886.

NINTH BATTALION OF INFANTRY.

Job B. Johnstone, Captain Company B, vice Payne, promoted, with rank from November 17, 1886.

SIXTEENTH REGIMENT OF INFANTRY.

Cyrus H. Dillman, Captain Company E, vice Kelly, resigned, with rank from December 22, 1886.

Clark Kelly, First Lieutenant Company E, vice Dillman, promoted, with rank from December 22, 1886.

William M. Boothman, Second Lieutenant Company E, vice Kelly, promoted, with rank from December 22, 1886.

SEVENTEENTH REGIMENT OF INFANTRY.

George E. Canning, Captain Company C, vice Plimpton, resigned, with rank from November 16, 1886.

RESIGNED.

Benjamin C. Davis, Captain Battery C, First Regiment Light Artillery, accepted December 21, 1886.

Charles E. Johnson, First Lieutenant Battery C, First Regiment Light Artillery, accepted February 8, 1887.

Isaac Bogart, Jr., Second Lieutenant Company B, First Regiment Infantry, accepted February 14, 1887.

George J. Bailey, Second Lieutenant Company B, Fifth Regiment Infantry, accepted January 17, 1887.

Arther L. Hayes, First Lieutenant Company F, Fifth Regiment Infantry, accepted January 17, 1887.

Jared L. Millikan, Captain Company B, Sixth Regiment Infantry, accepted December 21, 1886.

Z. T. Johnson, First Lieutenant Company B, Sixth Regiment Infantry, accepted January 20, 1887.

William C. Hunter, First Lieutenant Company B, Seventh Regiment Infantry, accepted November 19, 1886.

Nelson A. Rigger, First Lieutenant Company E, Seventh Regiment Infantry, accepted November 22, 1886.

George L. Deardorff, First Lieutenant Company A, Eighth Regiment Infantry, accepted January 10, 1887.

Francis M. Hoopengartner, Second Lieutenant Company F, Eighth Regiment Infantry, accepted January 5, 1887.

Frederick J. Picard, Colonel Thirteenth Regiment Infantry, accepted January 18, 1887.

Wilson O. Tolford, Captain Governor's Guard Gatling Gun Company, accepted February 5, 1887.

Addison F. Lenhart, Second Lieutenant Company C, Sixteenth Regiment Infantry, accepted November 19, 1886.

Frank Kelly, Captain Company E, Sixteenth Regiment Infantry, accepted November 24, 1886.

Edward J. Bunn, First Lieutenant Company C, Seventeenth Regiment Infantry, accepted February 9, 1887.

William B. D. Hummer, Second Lieutenant Company F, Seventeenth Regiment Infantry, accepted December 7, 1886.

By order of the Governor and Commander-in-Chief.

H. A. AXLINE,
Adjutant-General.

Official :

_____, *Asst. Adjutant-General.*

GENERAL HEADQUARTERS, STATE OF OHIO,
 ADJUTANT-GENERAL'S OFFICE,
 COLUMBUS, *March 23, 1887.*

GENERAL ORDERS, }
 No. 2. }

The following amendment to the Militia Laws of the State is hereby published for the information and government of all concerned :

AN ACT

To amend Section 3067 of the Revised Statutes of Ohio, as amended April 28, 1886, (vol. 83, O. L., p. 96.)

SECTION 1. *Be it enacted by the General Assembly of the State of Ohio*, That section three thousand and sixty-seven (3067) of the Revised Statutes of Ohio be amended so as to read as follows :

SEC. 3067. The amounts which may be collected as dues and fines, shall be fixed by the council of administration of each regiment and battalion, subject to the approval of the commander-in-chief. And the commanding officer of any regiment, battalion, company, troop or battery, may arrest any member of his command for the violation of any order, regulation or law for the government of the Ohio National Guard, and may authorize, in writing, any constable or police officer of the city, village or township where such violation occurs, to so arrest any such delinquent member; and such commanding officer may turn over to any constable or police officer any member of his command so arrested by him, and such constable or police officer shall hold such man so arrested and in his custody until he has been tried by the proper court-martial, or has been discharged by proper authority, and for a period not exceeding five days. Each commanding officer shall deduct from any pay received for any member of his command the amount of all dues and fines due from said member, for fines assessed by courts-martial, or in accordance with the provisions of this title.

SECTION 2. Said original section 3067, as amended April 28, 1886, is hereby repealed.

SECTION 3. This act shall take effect and be in force from and after its passage. Passed March 21, 1887.

By order of the Governor.

H. A. AXLINE,
Adjutant-General.

Official :

.....
Asst. Adjutant-General.

GENERAL HEADQUARTERS, STATE OF OHIO,
 ADJUTANT-GENERAL'S OFFICE,
 COLUMBUS, O., *April 15, 1887.*

GENERAL ORDERS, }
 No. 3. }

The following Code of Regulations for the National Guard, prepared by the Board of Officers under the provisions of Special Orders, No. 28, current series, is hereby adopted for the guidance and government of the Ohio National Guard.

By order of the Commander-in-Chief.
 (Signed)

H. A. AXLINE,
Major-General and Adjutant-General.

GENERAL HEADQUARTERS, STATE OF OHIO,
ADJUTANT-GENERAL'S OFFICE,
COLUMBUS, *May 7, 1887.*

GENERAL ORDERS, }
No. 4. }

Permission is hereby granted all Military Organizations in the United States, desiring to attend the National Drill and encampment, to be held at the city of Washington, D. C., from the 23d to the 30th of May, 1887, to enter and pass through the State of Ohio, armed and equipped.

By order of the Governor.

H. A. AXLINE,
Major-General and Adjutant-General.

Official:

.....
Col. and Asst. Adjutant-General.

GENERAL HEADQUARTERS, STATE OF OHIO,
ADJUTANT-GENERAL'S OFFICE,
COLUMBUS, *May 11, 1887.*

GENERAL ORDERS, }
No. 5. }

Under the provisions of Sections 3036 and 3043, Revised Statutes of Ohio, as amended April 28, 1886, the following changes in the organization of the Ohio National Guard are hereby made:

I. The Lawrence Cadets, Company E, Second Regiment of Infantry (Bellefontaine), is transferred to the Third Regiment of Infantry, and designated as Company H, of said Regiment.

II. The Salem Rifles, Company C (Lower Salem), and the Axline Cadets, Company E (New Matamoras), Sixth Regiment of Infantry, are hereby transferred to the Seventeenth Regiment of Infantry, and designated as Companies D and E, respectively, of said Regiment.

III. The Iron City Guard, Company C (Youngstown), of the Eighth Regiment of Infantry, is hereby transferred to the Fifth Regiment of Infantry, and designated as Company H, of said Regiment.

IV. The regimental organizations heretofore known and designated as the Seventh and Thirteenth Regiments of Infantry, are hereby disbanded. The Forbing Guard, Company I (Kenton), and the Godfrey Light Guard, Company K (Celina), of the Seventh Regiment of Infantry, are transferred to the Second Regiment of Infantry, and designated as Companies E and F, respectively, of said Regiment; and the Midland Guard, Company E (Mt. Sterling), of said Seventh Regiment, is transferred to the Sixth Regiment, and designated as Company E, of said Regiment. The Ellison Light Guard, Company C (Manchester), of said Thirteenth Regiment, is transferred to the Sixth Regiment, and designated as Company C, of said Regiment.

V. The remaining Companies of the Seventh and Thirteenth Regiments, and the Band of the Thirteenth Regiment, are hereby formed into a Regiment, to be known as the Thirteenth Regiment of Infantry, and the several Companies thereof are designated as follows: The Champion City Guard (Springfield), as Company A; the Scott Dragoons (Hillsboro), as Company B; the Germantown Light Guard (Germantown), as Company C; the Thompson Light Guard (Georgetown), as Com-

pany D; the Miami Light Guard (Miamisburg), as Company E; the Loveland Light Guard (Loveland), as Company F; the Xenia Light Guard (Xenia), as Company G; and the Barron Guard (New Vienna), as Company H, of said Thirteenth Regiment. The field officers of said disbanded Regiments (Col. W. J. White, Lieut.-Colonel Chas. D. Thompson, and Major Edward Rott) and the ranking staff officers, are hereby assigned to duty as the field and staff officers of said Thirteenth Regiment; and, unless the commanding officer of said Regiment otherwise determines by appointment within the period of thirty days from the date of these orders, the supernumerary officers will be honorably mustered out of the service as of that date. The supernumerary non-commissioned staff officers will be honorably discharged, or returned to their respective companies, as the commanding officer may direct.

VI. The Western Reserve Guard, Company G (Norwalk), of the Sixteenth Regiment of Infantry, is hereby transferred to the Fifth Regiment of Infantry, and designated as Company G, of said Regiment.

VII. The Ashland Guard, Company D (Polk), of the Seventeenth Regiment of Infantry, is transferred to the Eighth Regiment of Infantry, and designated as Company C, of said Regiment.

VIII. The commandants of the several Companies hereby transferred to other Regimental organizations, will report, on the receipt of these orders, by letter or in person, to their respective Regimental Commanders, for duty and orders.

By order of the Governor.

H. A. AXLINE,
Major-General and Adjutant-General.

Official:

.....

Col. and Assistant Adjutant-General.

GENERAL HEADQUARTERS, STATE OF OHIO,
ADJUTANT-GENERAL'S OFFICE,
COLUMBUS, May 14, 1887.

GENERAL ORDERS, }
No. 6. }

I. The annual encampments of the Ohio National Guard for the current year, will be held by regiments.

II. The camp of each regiment will be located as nearly as practicable within the territory occupied by the organization. Per diem and subsistence will be allowed for the period of six days.

III. Regimental Commanders will, within thirty days from the receipt of these orders, select suitable and available grounds for the location of their respective encampments, and they will immediately thereafter forward to these Headquarters a full and accurate description of the location of such encampments, together with the dates between which they are proposed to be held, for the approval of the Commander-in-Chief.

IV. No local donations whatever will be received as a condition for the location of any camp, other than the free use of the grounds required, water privileges and fuel; and no privileges whatever will be granted to any vendors of any kind, except to the authorized regimental sutler, who shall be restricted to the sale of such articles as may be prescribed by the regimental Council of Administration.

V. All contracts for railroad transportation will be made from these Headquarters, and routes and trains to be taken will be announced in orders. Quartermasters of Regiments will contract for subsistence and other necessary regimental expenses, under the direction of their commanding officers; and no expenses will

be incurred on account of the State, not covered by the allowances made by law ; and any officer, in behalf of any organization, contracting additional bills for camp expenses, and failing to provide for the prompt adjustment of the same, will be held responsible for conduct prejudicial to the interests of the service.

VI. No enlistments of recruits will be made by any officer within the period of thirty days next prior to the beginning of the encampment of their command ; and any company organization entering camp in a demoralized condition, or that fails to show a reasonable proficiency in company drill and in the manual of arms, will be promptly mustered out of the service as inefficient.

By order of the Governor.

H. A. AXLINE,
Major-General and Adjutant-General.

Official :

.....

Col. and Assistant Adjutant-General.

GENERAL HEADQUARTERS, STATE OF OHIO,
ADJUTANT-GENERAL'S OFFICE,
COLUMBUS, *May 15, 1887.*

GENERAL ORDERS, }
No. 7. }

The following changes have occurred among the Commissioned Officers of the Ohio National Guard, during the quarter ending May 15, 1887:

COMMISSIONED.

FIRST REGIMENT OF LIGHT ARTILLERY.

Theodore F. McConnell, Second Lieutenant Battery A, vice Beck, term expired, with rank from March 16, 1887.

John L. Smith, First Lieutenant Battery C, vice Johnson, resigned, with rank from April 20, 1887.

James D. Chandler, Second Lieutenant Battery F, original vacancy, with rank from March 24, 1887.

FIRST REGIMENT OF INFANTRY.

Charles E. Littell, First Lieutenant Company B, vice Ames, resigned, with rank from March 16, 1887.

Charles H. Jones, Second Lieutenant Company B, vice Littell, promoted, with rank from March 16, 1887.

John Proctor, First Lieutenant Company C, vice Haller, resigned, with rank from May 14, 1887.

Frederic A. Rife, First Lieutenant Company E, vice Hunter, resigned, with rank from April 16, 1887.

SECOND REGIMENT OF INFANTRY.

Pearl C. Campbell, First Lieutenant and Adjutant, vice Hackedorn, resigned, with rank from March 3, 1887.

SIXTH REGIMENT OF INFANTRY.

James B. Hysell, First Lieutenant Company I, vice Cline, appointed Adjutant, with rank from April 27, 1887.

William A. Giles, Second Lieutenant Company I, vice Hysell, promoted, with rank from April 27, 1887.

EIGHTH REGIMENT OF INFANTRY.

Adam Wurzauf, First Lieutenant Company A, vice Deardorff, resigned, with rank from February 23, 1887.

Will F. Mader, Second Lieutenant Company A, vice Wurzauf, promoted, with rank from February 23, 1887.

John M. Shelter, Second Lieutenant Company F, vice Hoopengartner, resigned, with rank from February 23, 1887.

NINTH BATTALION OF INFANTRY.

John H. Bellair, First Lieutenant and Quartermaster, vice Rudd, discharged, with rank from April 27, 1887.

Jesse Henderson, Chaplain, vice Russell, discharged, with rank from May 14, 1887.

FOURTEENTH REGIMENT OF INFANTRY.

John F. Zwerner, Captain Company D, vice Seller, resigned, with rank from April 16, 1887.

Willis E. Young, Second Lieutenant Company G, vice Cunningham, resigned, with rank from February 23, 1887.

Clarence M. Crumley, Second Lieutenant Company I, vice Brooker, term expired, with rank from February 28, 1887.

SIXTEENTH REGIMENT OF INFANTRY.

Leroy N. Brown, Second Lieutenant Company I, vice Harnden, resigned, with rank from May 14, 1887.

SEVENTEENTH REGIMENT OF INFANTRY.

Edward A. Beverly, First Lieutenant and Adjutant, vice Robinson, promoted, with rank from March 10, 1882.

Robert H. Fowler, First Lieutenant Company C, vice Burns, resigned, with rank from March 16, 1887.

Park Worley, Second Lieutenant Company C, vice Canning, promoted, with rank from February 23, 1887.

Lloyd T. Judd, Second Lieutenant Company F, vice Hummer, resigned, with rank from February 28, 1887.

Hamlin D. Burch, Captain Company K, re-commissioned March 16, 1887, with rank from March 10, 1882.

Edward A. Beverly, First Lieutenant Company K, re-commissioned March 16, 1887, with rank from March 10, 1882.

RESIGNED.

Samuel Bickerstaff, Second Lieutenant Company H, First Regiment Infantry, accepted February 19, 1887.

Gustav A. Haller, First Lieutenant Company C, First Regiment Infantry, accepted April 15, 1887.

Hillis F. Hackedorn, First Lieutenant and Adjutant, Second Regiment, accepted March 3, 1887.

F. J. Dawson, Assistant Surgeon, Second Regiment Infantry, accepted May 6, 1887.

Robert W. Furrow, First Lieutenant Company I, Second Regiment Infantry, accepted April 20, 1887.

Frank R. Walker, First Lieutenant Company E, Third Regiment Infantry, accepted May 9, 1887.

George P. Johnson, First Lieutenant Company H, Third Regiment Infantry, accepted April 12, 1887.

Charles O. Rutledge, Second Lieutenant Company H, Third Regiment Infantry, accepted May 9, 1887.

Henry F. Brainard, First Lieutenant Company E, Fifth Regiment Infantry, accepted May 9, 1887.

C. F. Cramer, Second Lieutenant Company F, Fifth Regiment Infantry, accepted March 17, 1887.

Rufus F. Thompson, Captain Company H, Fifth Regiment Infantry, accepted April 12, 1887.

George W. Schachleiter, Captain Company D, Sixth Regiment Infantry, accepted April 5, 1887.

Edward G. Will, First Lieutenant Company F, Sixth Regiment Infantry, accepted March 24, 1887.

William T. Hamilton, Captain Company E, Eighth Regiment Infantry, accepted April 6, 1887.

Henry Soliday, Captain Company I, Eighth Regiment Infantry, accepted March 25, 1887.

John C. Gribben, First Lieutenant Company C, Eighth Regiment Infantry, accepted April 6, 1887.

John R. Callahan, First Lieutenant and Adjutant Thirteenth Regiment Infantry, accepted April 29, 1887.

John Arthur, First Lieutenant Company B, Thirteenth Regiment Infantry, accepted May 7, 1887.

Clement C. Shaw, Second Lieutenant Company D, Thirteenth Regiment Infantry, accepted April 29, 1887.

Frank Gray, Second Lieutenant Company D, Thirteenth Regiment Infantry, accepted February 25, 1887.

W. W. Colmery, Second Lieutenant Company A, Fourteenth Regiment Infantry, accepted May 6, 1887.

Fred Pickering, Second Lieutenant Company C, Fourteenth Regiment Infantry, accepted May 6, 1887.

William L. McCampbell, First Lieutenant Company D, Fourteenth Regiment Infantry, accepted May 12, 1887.

William F. Duncan, Second Lieutenant Company E, Fourteenth Regiment Infantry, accepted February 21, 1887.

Albert H. Miller, Captain Company G, Fourteenth Regiment Infantry, accepted May 6, 1887.

Homer B. Abbott, Captain Company K, Fourteenth Regiment Infantry, accepted April 15, 1887.

Alexander Harnden, Second Lieutenant Company I, Sixteenth Regiment Infantry, accepted March 2, 1887.

George E. Canning, Captain Company C, Seventeenth Regiment Infantry, accepted April 29, 1887.

Ezekiel Moores, Captain Company H, Seventeenth Regiment Infantry, accepted April 6, 1887.

By command of the Governor.

H. A. AXLINE,
Major-General and Adjutant-General.

Official :

— — — — —, *Col. and Asst. Adjutant-General.*

GENERAL HEADQUARTERS, STATE OF OHIO,
ADJUTANT-GENERAL'S OFFICE,

COLUMBUS, *June 5, 1887.*

GENERAL ORDERS, }
No. 8. }

I. The following course of instruction is prescribed for the infantry organizations of the National Guard, for the Encampment Season of 1887:

FOR REGIMENTS AND BATTALIONS.

1. Formation of Battalion, Pars. 373 to 382 ; Manual of Arms and Firing, 385 to 395 ; to march in line, 396 to 402 and 410 ; to halt, 403 ; and Alignments, 404 and 405.
2. To pass obstacles, 408 and 409 ; to march by the flank, 411 to 413 and 416 ; to form *to* and *on* the right or left into line, 417, 420 and 421 ; to form column of fours front into line, 422 to 424.
3. To break into column of fours from the right or left, to march to the right or left, 414 and 415.
4. Formation of column of fours into line by two movements, 426 and 428 ; to form double column of fours, 430 ; to form double column of fours front and to the right or left into line, 431 and 432.
5. To form column of companies, 433 to 440 and 454 ; to march in column at full distance, 441 to 445 ; to change direction, 446 to 447.
6. To form the column at full distance into line, 448 and 457.
7. To advance and march by the flank of subdivisions, 460 and 461 and 465 ; to march again in column of fours, 466 ; marching by the flank of subdivisions, to form line, 462.
8. Marching by the flank of subdivisions, to march in column of subdivisions, and *vice versa*, 463 and 464 ; to form column of fours from column of subdivisions, and to form again into column, 467 to 471.
9. Ployment of battalion into close-column, 471 to 481 ; deployment of close column, 498 to 504.
10. To ploy the battalion into double column, 505 to 507 ; deployment of double column, 508 and 509.
11. To change front, 520.
12. Skirmish drill, 331 to 336, 348 to 358.

FOR COMPANIES.

II. Theoretical instruction in guard duty should be imparted to non-commissioned officers and privates, by their respective company commanders, before entering the camp.

III. The drill for companies in camp shall consist of such tactical movements as cannot be carried out in Armories. Special attention will be given to the Skirmish drill, Pars. 279 to 325, and 328 to 331.

IV. Schools of Theoretical Instruction in Tactics, the Duties of Guards and Sentinels, Regulation and Customs of Service, will be held daily while in camp.

By command of the Governor.

H. A. AXLINE,
Major-General and Adjutant-General.

Official :

.....
Col. and Assistant Adjutant-General.

GENERAL HEADQUARTERS, STATE OF OHIO,
ADJUTANT-GENERAL'S OFFICE,

COLUMBUS, June 5, 1887.

GENERAL ORDERS, }
No. 9. }

I. The following hours of service and roll-calls are hereby established for the encampments of 1887 :

REVEILLE.

Assembly of Trumpeters.

Reveille..... 5:30 A. M.
Assembly..... Immediately after Reveille.
Breakfast Call (By a Musician of the Guard)..... 6:30 A. M.
Sick Call..... (By a Musician of the Guard)..... 7:00 A. M.

DRILL—SQUAD OR COMPANY.

Assembly of Trumpeters.

Drill Call..... 7:30 A. M.
Assembly..... Immediately after Drill Call.
Recall from Drill..... (By a Musician of the Guard)..... 8:30 A. M.
Fatigue..... (By a Musician of the Guard)..... 8:30 A. M.

GUARD MOUNTING.

Assembly of Trumpeters.

Assembly.—*Guard details*..... 8:45 A. M.
At this call the guard details will form and be inspected by the First Sergeants, and the band will march to the regimental parade.
Adjutant's Call 9:00 A. M.
To be sounded by all the Trumpeters (at a signal from the Adjutant), followed by a march from the band. At this call the guard details will be conducted to the regimental parade by the First Sergeants, for guard mounting.
Recall from Fatigue..... (By a Musician of the Guard)..... 9:30 A. M.

BATTALION DRILL.

Assembly of Trumpeters.

Drill Call..... 10:00 A. M.
Assembly..... Immediately after Drill Call.
Adjutant's Call..... 10:05 A. M.

To be sounded by all the Trumpeters, followed by a march. At this call the Companies will be marched to the regimental parade to form the battalion line.

Musicians will form for practice.

Recall from Drill..... (By a Musician of the Guard)..... 11:30 A. M.
First Sergeant's Call..... (" " ")..... 11:45 A. M.
Dinner Call:..... (" " ")..... 12:00 M.
School Call—*Non-Commissioned Officers* " " ")..... 1:30 P.M.

DRILL—SKIRMISH DRILL—BY COMPANY OR BATTALION.

Assembly of Trumpeters.

Drill Call.....	2:30 P. M.
Assembly.....	Immediately after Drill Call.
Recall from Drill..	(By a Musician of the Guard)..... 4:30 P. M.
Supper Call	(" " ")..... 5:30 P. M.

DRESS-PARADE AND RETREAT.

Assembly of Trumpeters.

Assembly	6:10 P. M.
Adjutant's Call.....	6:20 P. M.
To be sounded by all the Trumpeters. At this call the Adjutant, the Sergeant-Major, the Companies and the Band (the latter playing), will march to the regimental parade, and the battalion line be formed.	
Retreat.....	At Sunset.
At dress-parade, <i>retreat</i> is sounded after the return of the band to its position in line. When there is no dress-parade, the band assembles with the field musicians at the first call for <i>retreat</i> , and the companies form for roll-call the same as at <i>reveille</i> and <i>tattoo</i> .	
School Call—Officers.....	(By a Musician of the Guard)..... 7:30 P. M.
Band Practice	8:00 P. M.

TATTOO.

Assembly of Trumpeters.

Tattoo	9:30 P. M.
Assembly	Immediately after Tattoo.
Taps.....	(By a Musician of the Guard).....10:00 P. M.

II. The *Assembly of Trumpeters* will be sounded by a musician of the Guard five minutes before the *Assembly*, except at *Reveille* and *Tattoo*, in which calls it will be fifteen minutes before.

III. School of instruction will be ordered by commanding officers for the officers of their respective commands, if the weather or other circumstances make it necessary to omit the drill.

IV. Immediately after the first hour for drill, the Guard Detail which came off duty the preceding day, will be assembled and will thoroughly police the camp, excepting only the grounds occupied for quarters of the companies and the guard.

V. The officer of the Guard is charged with the prompt sounding of the calls.

VI. When (for any purpose) drill is suspended, recall from drill will be sounded immediately after the first call for drill.

VII. Challenging will commence at *Tattoo* and cease at *Reveille*.
By command of the Governor.

H. A. AXLINE,
Major-General and Adjutant-General.

Official:

.....

Col. and Assistant Adjutant-General.

GENERAL HEADQUARTERS, STATE OF OHIO,
ADJUTANT-GENERAL'S OFFICE,
COLUMBUS, *June 15, 1887.*

GENERAL ORDERS, }
No. 10. }

The following general rules will be observed and enforced by the commandants of the several regiments and battalions of the Ohio National Guard during the encampment season of 1887:

I. No member of the National Guard will be allowed to wear, or have in his possession, a citizen's suit during the encampment of his command; and civilians shall, under no circumstances, be allowed to wear the uniform of a National Guardsman while visiting camp.

II. The insignia on the cap, showing the number of the regiment and the letter of the company to which the soldier belongs, must be worn on the cap at all times; and any enlisted man found violating this provision of these orders, will be promptly arrested and denied the liberties of the camp during the remainder of the encampment.

III. All civilians not holding special written permission from the commanding officer of the encampment to remain therein, will be required to leave camp at tattoo.

IV. Noise or confusion after tattoo will in no case be tolerated; and all officers will be held strictly responsible for the conduct of their men in this particular. Serenading parties become a nuisance after taps, and will not be allowed. Night is the time for rest and recuperation, and no soldier should be unnecessarily deprived of that rest between taps and reveille.

V. Regimental Commanders will require companies to be fully supplied with suitable straw ticks for bedding, and no straw other than that used in filling tick will be allowed in camp.

VI. Many of the companies of the Guard have heretofore been impoverished by feeding visitors and camp followers while in camp; it is, therefore, strictly ordered that hereafter no visitors whatever shall be entertained at company expense. Regimental sutlers shall be required to make ample provision for the entertainment of the guests of any member of the Guard at reasonable rates.

VII. Within ten days after the close of the camp, commanding officers of regiments will make reports to these headquarters of the general management of their commands and the results obtained.

By command of the Governor.

H. A. AXLINE,
Major-General and Adjutant-General.

Official :

.....

Col. and Assistant Adjutant-General.

GENERAL HEADQUARTERS, STATE OF OHIO,
ADJUTANT-GENERAL'S OFFICE,
COLUMBUS, *June 25, 1887.*

GENERAL ORDERS, }
No. 11. }

I. The annual encampments of the different Regiments of the Ohio National Guard, for the current year, will be held as follows :

First Regiment of Light Artillery, at Delaware, August 10—15, inclusive.
 First Regiment of Infantry, at Washington C. H., July 4—9, inclusive.
 Second Regiment of Infantry, at Findlay, August 10—15, inclusive.
 Third Regiment of Infantry, at Union City, August 17—22, inclusive.
 Fifth Regiment of Infantry, at Coits, August 4—9, inclusive.
 Sixth Regiment of Infantry, at Delaware, August 3—8, inclusive.
 Eighth Regiment of Infantry, at Galion, August 23—28, inclusive.
 Ninth Battalion of Infantry, at Wilmington, July 28 to August 2, inclusive.
 Thirteenth Regiment of Infantry, at Dayton, July 7—12, inclusive.
 Fourteenth Regiment of Infantry, at Lancaster, August 2—7, inclusive.
 Sixteenth Regiment of Infantry, at Port Clinton, August 17—22, inclusive.
 Seventeenth Regiment of Infantry, at New Lexington, August 23—28, inclusive.

II. The following orders from the Adjutant-General of U. S. Army, Washington, D. C., are published for the information of all concerned :

HEADQUARTERS OF THE ARMY,
 ADJUTANT-GENERAL'S OFFICE,
 WASHINGTON, *June 18, 1887.*

SPECIAL ORDERS, }
 No. 140. }

EXTRACT.

* * * * *

3. By direction of the Acting Secretary of War, the following named Officers will visit the camps of the National Guard of Ohio during the annual encampments, commencing about the first proximo, and extending through the months of July and August, at such places as may be hereafter designated by the Governor of Ohio, for the purpose of inspecting the troops taking part in the encampments, under such instructions as they may receive from the Adjutant-General of the Army :

First Lieutenant, Alfred C. Sharpe, 22d Infantry.

First Lieutenant, Augustus P. Blocksom, 6th Cavalry.

On the completion of each inspection, they will rejoin their proper stations, if expedient.

The travel enjoined is necessary for the public service.

4. By direction of the Acting Secretary of War, Second Lieutenant Elisha S. Benton, Third Artillery, will visit the camp of the Artillery Regiment, National Guard of Ohio, during the period of its encampment at Delaware, Ohio, August 10 to 15, 1887, inclusive, for the purpose of inspecting that Regiment, under such instructions as he may receive from the Adjutant-General of the Army, and on the completion of this duty, will return to his proper station. The travel enjoined is necessary for the public service.

* * * * *

By command of Lieutenant-General Sheridan.

R. C. DRUM,
Adjutant-General.

Official:

J. C. KELTON,
Asst. Adjutant-General.

III. First Lieutenant, Alfred C. Sharpe, 22d Infantry, U. S. A.; First Lieutenant, Augustus P. Blocksom, 6th Cavalry, U. S. A., and Second Lieutenant, Elisha S. Benton, 3d Artillery, U. S. A., are hereby appointed Additional Aides-de-Camp

and Acting Assistant Inspecting Officers on the Staff of the Commander-in-Chief, for said encampments, and they will be obeyed and respected accordingly.

By command of the Governor.

H. A. AXLINE,
Major-General and Adjutant-General.

Official :

..... •

Col. and Asst. Adjutant-General.

GENERAL HEADQUARTERS, STATE OF OHIO,
ADJUTANT-GENERAL'S OFFICE,
COLUMBUS, August 1, 1887.

GENERAL ORDERS, }
No. 12. }

I. The following orders from the Adjutant-General of the U. S. Army, Washington, D. C., are published for the information of all concerned :

HEADQUARTERS OF THE ARMY,
ADJUTANT-GENERAL'S OFFICE,
WASHINGTON, July 23, 1887.

SPECIAL ORDERS, }
No. 169. }

EXTRACT.

* * * * *

16. By direction of the Secretary of War, Captain Joseph T. Haskell, 23d Infantry, is detailed as one of the officers to visit the camps of the National Guard of Ohio, under Special Orders, No. 140, June 18, 1887, from this office, *vice* First Lieutenant, Augustus P. Blocksom, 6th Cavalry, relieved from the detail. Captain Haskell will attend at such of the encampments as are yet to be held, and, on the completion of each inspection, will rejoin his proper station, if expedient. The travel enjoined is necessary for the public service.

* * * * *

By command of Lieutenant-General Sheridan.

R. C. DRUM,
Adjutant-General.

Official :

J. C. KELTON,
Asst. Adjutant-General.

II. Captain Joseph T. Haskell is hereby appointed Additional Aide-de-Camp and Acting Inspecting Officer on the Staff of the Commander-in-Chief, for said encampments, and he will be obeyed and respected accordingly.

By command of the Governor.

H. A. AXLINE,
Major-General and Adjutant-General.

Official :

.....

Col. and Asst. Adjutant-General.

GENERAL HEADQUARTERS, STATE OF OHIO,
ADJUTANT-GENERAL'S OFFICE,
COLUMBUS, August 15, 1887.

GENERAL ORDERS, }
No. 13. }

The following changes have occurred among the commissioned officers of the Ohio National Guard, during the quarter ending August 15, 1887:

COMMISSIONED.

Names.	Rank.	Organization.		Date of Rank.	Vice.
		Co.	Regiment.		
Henry A. Leslie.....	Captain	C	1st Art'y.	July 13, 1887.	Davis.
J. William Koos	1st Lieut.....	C	"	"	Smith.
William A. Scott	2d Lieut.....	C	"	"	Koos.
Abraham L. Whitney..	Major		1st Inf't'y.	May 23, 1887.	Orig. vacancy.
Alva L. Paul	Maj. & Surg..		2d Inf't'y.	July 12, 1887.	Vail.
Edward Lunney	1st Lieut.....	E	"	July 11, 1887.	Pearce.
David C. Long.....	"	I	"	"	Furrow.
Wm. H. Dickman, Jr..	"	K	"	"	Medford.
Harry H. Williams	Major.....		3d Inf't'y.	"	Orig. vacancy.
William H. Eccles.....	Captain	B	"	July 30, 1887.	Williams.
Charles O. Taylor.....	1st Lieut	B	"	"	Eccles.
Oscar S. Robinson..	2d Lieut	B	"	"	Taylor.
Harry H. Hunter	Captain	F	"	July 19, 1887.	Harp.
Harry Z. McIntire	1st Lieut.....	F	"	"	Hunter.
Henry W. Westfall.....	2d Lieut	F	"	"	McIntire.
Joseph Wilkinson.....	Captain	H	"	Aug. 1, 1887.	Wiand.
Charles Sherman	1st Lieut.....	H	"	June 3, 1887.	Johnson.
William H. Kemper.....	2d Lieut	H	"	"	Rutledge.
Carl G. Weber.....	Capt. & A. S..		5th Inf't'y.	July 11, 1887.	Craven.
Ernest F. Cook.....	2d Lieut	B	"	July 30, 1887.	Maxson.
Edwin Z. Scoville.....	1st Lieut.....	E	"	July 11, 1887.	Brainard.
William H. Munger.....	2d Lieut	E	"	"	Scoville.
Ernest S. Trayte.....	"	F	"	"	Cramer.
John A. Freed, Jr	Captain	H	"	May 27, 1887.	Thompson.
John G. James	1st Lieut... ..	H	"	May 31, 1887.	Freed.
John P. Maynard	Captain	B	6th Inf't'y	June 22, 1887.	Millikan.
John P. Haffler.....	1st Lieut.....	B	"	June 6, 1887.	Johnson.
Alfred N. VanDeman...	2d Lieut	B	"	"	Haffler.
John A. Murray.....	1st Lieut	C	"	Aug. 3, 1887.	Murray.
Belden V. Hicks	Captain	D	"	May 10, 1887.	Schachleiter.
Charles Toops	2d Lieut	E	"	Aug. 9, 1887.	Van Buskirk.
Samuel J. Irwin.....	1st Lieut.....	F	"	July 21, 1887.	Will.
Emmett F. Taggart	Major		8th Inf't'y	June 22, 1887.	Orig. vacancy.
Albert A. Bartlett	1st Lt. & Adj..		"	Aug. 6, 1887.	Taggart.
William H. Ambrose...	Captain	C	"	June 22, 1882.	Re-commiss'd.
David S. Youngblood..	1st Lieut.....	C	"	May 30, 1887.	Gribben.
Edward M. Wicks.....	2d Lieut	C	"	July 13, 1887.	Youngblood.
Samuel M. Hoon	Captain	E	"	May 25, 1887.	Hamilton.
Solomon H. Maneval...	1st Lieut.....	E	"	June 2, 1887.	Hoon.
Alfred A. Bushong.....	2d Lieut	E	"	July 25, 1887.	Bailey.
Jacob H. Rickert.....	Captain	G	"	May 28, 1887.	Seigfried.
Balera J. Aurand	"	I	"	June 2, 1887.	Soliday.
Charles Caldwell.....	2d Lieut	I	"	"	Ledman.
Scott Martin.....	Captain	A	9th Inf't'y	June 7, 1887.	Rudd.
John H. Stewart	1st Lieut.....	A	"	June 22, 1887.	Tyra.
William H. Sherburne.	2d Lieut	A	"	June 7, 1887.	Martin.
Burt H. Whiteley	1st Lt. & Q. M.		13th Inf.	June 22, 1887.	Rees.
John G. Rhodes	Captain	D	"	June 29, 1887.	Jawwill.
Thomas C. Smiley.....	2d Lieut	D	"	"	Shaw.
Charles Eminger	1st Lieut.....	E	"	July 20, 1887.	Halley.

COMMISSIONED—Continued.

Names.	Rank.	Organization.		Date of Rank.	Vice.
		Co.	Regiment.		
August Storck.....	2d Lieut	E	13th Inf.	July 5, 1887.	Eminger.
Harry Richards	1st Lieut.....	G	"	June 18, 1887.	Howard.
Charles Gorham.....	2d Lieut	G	"	"	Connell.
Edwin G. Bailey	1st Lieut.....	A	14th Inf.	July 2, 1887.	Knell.
George H. Murray.....	2d Lieut	A	"	"	Colmery.
Frank F. Ford.....	1st Lieut.	D	"	July 20, 1887.	McCampbell.
Eelzie Parthmore.....	2d Lieut	D	"	July 23, 1887.	Ford.
Frank W. Wilson	"	E	"	Aug. 1, 1887.	Duncan.
Frank S. McMahon	Captain	G	"	July 2, 1887.	Miller.
Willis E. Young.	1st Lieut... ..	G	"	"	McMahon.
C. Barton Adams.....	Captain	K	"	May 23, 1887.	Abbott.
Fred. M. Bauereis.....	1st Lieut.....	K	"	July 2, 1887.	Adams.
Ralph H. Van Deman..	2d Lieut	K	"	"	Bauereis.
Will W. Homes	Captain	L	"	July 30, 1887.	Tolford.
Charles M. Keyes.....	Colonel		16th Inf.	June 14, 1887.	Norton.
Henry S. Bunker.....	Lieut.-Col.....		"	July 5, 1887.	Keyes.
Arthur L. Osborn	Maj. & Surg... ..		"	July 6, 1887.	Woods.
Charles O. Phelps.....	2d Lieut	C	"	June 17, 1887.	Lenhart.
Wm. G. Klinepeter.....	"	D	"	Aug. 10, 1887.	Noble.
Wm. M. Boothman.....	1st Lieut.....	E	"	June 17, 1887.	Kelly.
John W. Hitt.....	2d Lieut	E	"	"	Boothman.
Carl H. Beckham.....	"	H	"	"	Smiley.
Emanuel Finger	Lieut.-Col		17th Inf.	Feb. 24, 1882.	Re-commiss'd.
Albert D. Fowler.....	2d Lieut	A	"	Aug. 15, 1887.	Arnold.
Marcena M. Murphy ...	Captain	C	"	May 30, 1887.	Canning.
William B. Eldridge ...	1st Lieut.....	G	"	Aug. 15, 1887.	Merrick.
David Collier.....	Captain	H	"	May 26, 1887.	Moore.
Ammon B. Critchfield..	1st Lieut.....	H	"	June 1, 1887.	Collier.
R. S. Holtzberry	"	K	"	June 14, 1887.	Beverly.
Frank Brunner	2d Lieut	K	"	"	Holtzberry.
Thomas T. Watters.....	"		Tol. Cad.	May 16, 1887.	Datesman.

RESIGNED.

Names.	Rank.	Organization.		Accepted.
		Co.	Regiment.	
John L. Smith	1st Lieutenant	C	1st Artillery.....	May 31.
Dudley G. Gray	2d "	H	"	July 12.
John M. Pearce	1st "	E	2d Infantry	June 9.
Charles W. Medford.....	1st "	K	"	June 9.
James H. Harp.....	Captain	F	3d Infantry	July 6.
David J. Wiand	"	H	"	June 29.
W. C. Craven.....	Captain and A. S.		5th Infantry.....	May 31.
William B. Maxon	2d Lieutenant	B	"	July 21.
Marion Van Buskirk.....	2d "	E	6th Infantry.....	August 4.
Robert E. Bailey	2d "	E	8th "	May 24.
Albert Tyra	1st "	A	9th "	May 24.
Charles E. Knell.....	1st "	A	14th "	May 17.
Jonathan D. Norton.....	Colonel.....		16th "	May 17.
Isaac T. Merrill.....	1st Lieut. and Adj't..		16th "	July 23.
Joseph T. Woods	Major and Surgeon..		16th "	June 5.
Josiah A. Noble	2d Lieutenant	D	16th "	July 23.
Charles B. Arnold.....	2d "	A	17th "	August 4.
Charles E. Merrick	1st "	G	17th "	July 5.

DISCHARGED.

Names.	Rank.	Co.	Regiment.	Date.
Charles Elwood	2d Lieutenant	B	1st Artillery.....	August 3.
William Eminger	"	E	13th Infantry.....	June 8.

By command of the Governor.

H. A. AXLINE,
Major-General and Adjutant-General.

Official:

.....
Col. and Asst. Adjutant-General.

GENERAL HEADQUARTERS, STATE OF OHIO,
ADJUTANT-GENERAL'S OFFICE,
COLUMBUS, September 23, 1887.

GENERAL ORDERS, }
No. 14. }

I. Within fifteen days after the close of the Third quarter of each year, Regimental, Troop, Battery and Company Treasurers will forward to these headquarters, through the proper channel, a full and itemized statement of account, showing the condition of their respective funds and exhibiting all receipts and expenditures for the year ending September 30th. This statement of account must bear the endorsement of the Troop, Battery or Company Council of Administration, and also that of the Regimental Commander. (See Sections 537, 541, Code of Regulations, O. N. G., and General Orders No. 10, series of 1886).

II. No allowances will be made to any organization under the provisions of Section 3080, Revised Statutes, until the statement of the Treasurer thereof, and all other reports required by law, have been received by the Adjutant-General.

By order of the Governor.

H. A. AXLINE,
Major-General and Adjutant-General.

Official:

.....
Col. and Assistant Adjutant-General.

GENERAL HEADQUARTERS, STATE OF OHIO,
ADJUTANT-GENERAL'S OFFICE,
COLUMBUS, November 15, 1887.

GENERAL ORDERS, }
No. 15. }

The following changes have occurred among the commissioned officers of the Ohio National Guard, during the quarter ending November 15, 1887:

COMMISSIONED.

FIRST REGIMENT OF LIGHT ARTILLERY.

Henry M. Clewell, First Lieutenant and Adjutant, original vacancy, with rank from June 22, 1883.

Fred. A. Gay, First Lieutenant Battery A, vice Clewell, appointed Adjutant, with rank from October 24, 1887.

Clarence J. Neare, Second Lieutenant Battery B, vice Elwood, discharged, with rank from November 11, 1887.

FIRST REGIMENT OF INFANTRY.

George Brenner, Captain Company C, recommissioned, with rank from September 12, 1882.

SECOND REGIMENT OF INFANTRY.

Byron M. Clen Dening, Major, original vacancy, with rank from September 9, 1887.

FIFTH REGIMENT OF INFANTRY.

John W. Gibbons, Lieutenant-Colonel, vice Thorp, resigned, with rank from August 30, 1887.

Llewellyn R. Davis, Captain Company A, recommissioned, with rank from September 7, 1882.

Newell J. Fuller, Captain Company D, recommissioned, with rank from August 18, 1882.

SIXTH REGIMENT OF INFANTRY.

Orin F. Thompson, First Lieutenant and Quartermaster, recommissioned, with rank from July 21, 1882.

Charles F. Dean, Chaplain, recommissioned, with rank from August 3, 1882.

FOURTEENTH REGIMENT OF INFANTRY.

Curtis C. Martin, First Lieutenant Company C, vice Schick, promoted, with rank from September 5, 1887.

John M. Brown, Second Lieutenant Company C, vice Pickering, resigned, with rank from August 30, 1887.

John F. McFadden, First Lieutenant Company F, vice Berry, resigned, with rank from August 31, 1887.

SIXTEENTH REGIMENT OF INFANTRY.

Jacob Kreiger, First Lieutenant Company D, recommissioned, with rank from September 5, 1882.

SEVENTEENTH REGIMENT OF INFANTRY.

Judson H. Hovey, Captain Company D, recommissioned, with rank from September 5, 1882.

George Lauer, First Lieutenant Company D, vice Schramm, term expired, with rank from September 5, 1887.

Walter Stanley, Second Lieutenant Company D, vice Lauer, promoted, with rank from September 5, 1887.

FIRST CLEVELAND TROOP—CAVALRY.

George A. Garretson, Captain, original vacancy, with rank from April 7, 1884.

Henry E. Myers, First Lieutenant, original vacancy, with rank from September 10, 1887.

Harris H. Baxter, Second Lieutenant, original vacancy, with rank from September 10, 1887.

RESIGNED.

C. A. Wightman, Second Lieutenant Battery F, First Regiment Light Artillery, accepted October 8, 1887.

E. W. Lewis, First Lieutenant Battery H, First Regiment Light Artillery, accepted October 8, 1887.

John Lorenz, Second Lieutenant Company E, First Regiment Infantry, accepted October 24, 1887.

Winfield S. Metts, Captain Company B, Second Regiment Infantry, accepted September 23, 1887.

George F. Foster, First Lieutenant Company B, Second Regiment Infantry, accepted October 8, 1887.

James W. McCune, Second Lieutenant Company G, Third Regiment Infantry, accepted October 13, 1887.

Williard B. Jordan, First Lieutenant Company D, Fifth Regiment Infantry, accepted October 26, 1887.

John C. Pugh, First Lieutenant Company G, Sixth Regiment Infantry, accepted November 7, 1887.

John W. McLean, Captain Company I, Sixth Regiment Infantry, accepted October 13, 1887.

John M. Shelter, Second Lieutenant Company F, Eighth Regiment Infantry, accepted September 9, 1887.

Charles A. Brown, Major Fourteenth Regiment Infantry, accepted November 10, 1887.

Charles W. Berry, First Lieutenant Company F, Fourteenth Regiment Infantry, accepted August 29, 1887.

S. Roe Robinson, Major Seventeenth Regiment Infantry, accepted August 23, 1887.

By command of the Governor.

H. A. AXLINE,
Major-General and Adjutant-General.

Official:

_____,
Col. and Assistant Adjutant-General.

THIRTY-THIRD ANNUAL REPORT
OF THE
BOARD OF TRUSTEES AND OFFICERS
OF THE
Cleveland Asylum^{for}_{the} Insane,
TO THE
Governor of the State of Ohio,
FOR THE FISCAL YEAR 1887.

TRUSTEES AND OFFICERS.

BOARD OF TRUSTEES.

J. C. JOHNSON, Esq.....	Seville.
JOHN TOD, Esq	Cleveland.
R. K. PAIGE, Esq.....	Painesville.
JOHN ZIMMERMAN, Esq	Wooster.
D. L. KING, Esq	Akron.

OFFICERS.

JAMIN STRONG, M. D.....	<i>Superintendent.</i>
FREDERICK D. BURTON.....	<i>First Assistant Physician.</i>
EUGENE G. CARPENTER, M. D	<i>Second Assistant Physician.</i>
WELLINGTON W. LEONARD, M. D	<i>Third Assistant Physician.</i>
CHARLES W. DIEHL	<i>Steward.</i>
MISS MARY L. STRONG	<i>Matron.</i>
FRANCIS GALLAGHER	<i>Store-keeper.</i>

ANNUAL REPORT.

REPORT OF TRUSTEES.

To the Honorable JOSEPH B. FORAKER, Governor of Ohio :

The Board of Trustees of the Cleveland Asylum for the Insane have the honor to submit herewith the Thirty-third annual report of that institution, together with that of the Superintendent and Steward.

A consideration of these reports will show by the large number of patients recovered, the low rate of mortality, and the low cost per capita, with the excellent health of the inmates generally, that there has been no relaxation of effort to maintain the high character this institution enjoys.

On the night of October 12th a fire occurred which destroyed the boiler-house, laundry, rear building, containing rooms which were occupied by forty persons, mending, sewing, distributing and employe's dining-room, and amusement hall building, with the exception of store-room. Most of the washing-machines of the laundry were saved. As the needs of the asylum require the washing and ironing of 12,000 pieces per week, the only possible course left for the Board to pursue was to authorize the building of a temporary laundry immediately. This was done and put in operation in less than three weeks' time. To meet these pressing demands and purchase needed laundry machinery, and make other temporary provisions necessitated by the fire, the unexpended balance of the ordinary repair fund, amounting to \$1,400 was appropriated by the Board; and other purchases, aggregating in all \$5,000, were authorized by us. Of course this sum will appear as a deficiency to be met by the Legislature at the coming session. Plans and estimates of cost for permanent fire-proof structures, to replace those destroyed by the fire, are now being prepared, and an appropriation for their construction will be urged upon the Legislature, and we trust very promptly granted. Notwithstanding the sad calamity which visited the institution, resulting in the destruction of considerable property and the loss of several lives, we think it fortunate that it was not worse.

A fire in any crowded building, with a panic and loss of self-control on the part of the occupants, is a serious matter. A panic in an Insane Asylum is appalling, and too much credit cannot be awarded our efficient Superintendent and his able corps of assistants for their presence of mind and wonderful control of the unfortunates who, under the most advantageous circumstances, are so difficult to manage. That the loss of life was so small under the circumstances is a subject of devout congratulation. The portions destroyed were the remains of a former fire and were not in as good condition as the other parts of the asylum.

The following estimates of appropriations required are made upon careful consideration, and we earnestly urge that the items thereof be allowed by the Legislature :

NEEDED APPROPRIATIONS.

Books and pictures.....	\$400 00
Carpets.....	1,226 54
Current expenses.....	105,000 00
Connecting Asylum sewer with Broadway sewer.....	4,000 00
Expense of Trustees.....	800 00
Fences	1,000 00
Horses	500 00
Laundry machinery—deficiency.....	800 00
New furniture and repairing old.....	1,200 00
Ordinary repairs.....	5,000 00
Ordinary repairs (deficiency by reason of fire).....	5,000 00
Painting....	1,500 00
Recovering court..	1,000 00
Salaries of officers.	5,200 00
Re-building drying-room—deficiency.....	242 66
Total	\$132,869 00

As in former years, the attention of the Legislature is called to the meagre salaries paid the superintendents of our State institutions. We feel that in view of the talent and experience required adequately to fill these positions, these salaries should be increased to such an amount as shall be a fair compensation for services rendered and talent required. It should be, and doubtless is, the purpose of the Legislative and Executive departments of our State to secure the very best results from the charitable institutions of the State. They now rank high in public esteem, and their increasing efficiency, and still wider usefulness, should be the future aim of the State.

J. C. JOHNSON,
JOHN TOD,
R. K. PAIGE,
JOHN ZIMMERMAN,
D. L. KING,
Trustees.

Cleveland Asylum for the Insane, November 16, 1887.

SUPERINTENDENT'S REPORT.

To the Board of Trustees of the Cleveland Asylum for the Insane :

GENTLEMEN: The thirty-third annual report of this Institution, in connection with some comments pertinent to such a document, is respectfully submitted.

Your attention is respectfully called to the following

SUMMARY.

On November 15, 1886, there were in the asylum 625 patients, and on the 15th of November, 1887, the number was 651. There were 274 patients admitted during the year, of whom 141 were males, and 133 females. The total number under treatment was, therefore, 899.

The largest number of patients in the asylum at any time during the year was 660; the smallest number, 625; the average number for the year, 644.3.

There were 248 persons discharged during the year, of whom 119 were males and 129 females; of this number there were recovered, 99; improved, 65; unimproved, 52; died, 31. Of those recovered there were 43 males and 56 females; of those improved there were 33 males and 32 females; of those unimproved there were 25 males and 27 females; of those who died there were 18 males and 13 females; not insane, 1.

The percentage of recoveries on the number admitted during the year was 36.15; the percentage of deaths on the total number under treatment, including the suffocated, was 3.44, not including the suffocated, 2.66; the percentage of deaths on the average number under treatment, including the suffocated, was 4.96; not including the suffocated, 3.72.

Of the 31 who died during the year, 4 were in the asylum less than one month; one less than three months; 3 less than six months; 3 less than nine months; 1 less than twelve months; 3 less than eighteen months; 2 less than thirty months; 2 less than thirty-six months; 1 less than four years; 2 less than five years; 1 less than six years; and 8 over six years.

The causes of death were as follows: apoplexy, 2; paralysis, 6; organic disease of brain, 1; suffocation, 7; diabetes, 1; pneumonia, 2; chronic maniacal exhaustion, 1; acute maniacal exhaustion, 4; paralysis, 1; congestion of lungs, 1; enteritis, 2; marasmus, 1; exhaustion, 2.

The ages of those admitted were as follows: between fifteen and twenty years of age, 9; between twenty and twenty-five, 22; between twenty-five and thirty, 40; between thirty and thirty-five, 33; between thirty-five and forty, 46; between forty and forty-five, 31; between forty-five and fifty, 36; between fifty and fifty-five, 19; between fifty-five and sixty, 17; between sixty and sixty-five, 11; between sixty-five and seventy, 7; between seventy and seventy-five, 2; between seventy-five and eighty, 1.

The reported duration of the insanity of those admitted was as follows: less than one month, 50; between one and three months, 61; between three and six months, 38; between six and nine months, 28; between nine and twelve months, 4; between one and two years, 38; between two and three years, 21; between three and four years, 4; between four and five years, 4; between five and six years, 2; between six and ten years, 6; over ten years, 2; unknown, 15; not insane, 1.

Of the number who were admitted during the year there were native born, 196; foreign born, 76; unknown, 2.

To enter a little more into detail, I desire to remark that of the 274 patients admitted during the year, 226 were first admissions; 31 were second admissions; 9 were third admissions; and 8 were fourth admissions.

DEATHS CAUSED BY FIRE.

The number of deaths for the year reported in the above summary is thirty-one (31), but the death of seven (7) of this number—all female patients—was caused by the fire which occurred here on the night of October 12th, an event never to be forgotten in the history of this Institution. The actual number of patients dying from disease during the year, and the proper number to be placed on our mortality list, should therefore be stated at twenty-four (24), instead of thirty-one (31); and the percentage of deaths on the total number under treatment, at 2.66; and on the average number under treatment, at 3.72.

According to some British authorities, a low average death-rate in asylums for the insane, may to a large extent be regarded as a test of successful work. There are, however, many modifying circumstances connected with the death-rate of an institution of this character, which render it unsafe to regard it as a uniform test of successful asylum management. We are willing to have this test applied to us here, as

our mortality rate for twelve years past on the total number of patients under treatment, has not exceeded 4 per cent. per annum,—especially as the same authorities (British) regard a mortality rate in asylums for the insane that does not exceed seven per cent., as a favorable showing.

It must be conceded in any event, that a uniformly low death-rate in an asylum implies excellent sanitary surroundings, and a strict and thorough enforcement of the laws of hygiene, especially including a wholesome and nutritious diet, personal cleanliness, and proper exercise, accompanied by judicious medical and moral treatment. These are all essential, and none should be omitted in the treatment and management of the insane.

EXPENSES.

The per capita cost for the support of patients during the year, including salaries of officers, was.....	\$164.52
Per capita cost per week on same basis.....	3.15
Per capita per annum, exclusive of officers' salaries	156.64
Per capita cost per week on same basis.....	3.00
Our average per capita cost per week for eleven years immediately preceding the last one, exclusive of officers' salaries, was.....	3.12
Per capita cost per week on the same basis.....	3.10

HOSPITAL WARDS.

It was proposed a year ago to make certain alterations in two of our rear section wards—one on the male, and one on the female side of the Asylum—for the double purpose of increasing our capacity, and furnishing certain facilities for the care of the suicidal, and other patients needing special attention both day and night. An appropriation was granted for this purpose; the proposed changes and improvements were made during the past summer, and our most sanguine expectations are being realized in the successful workings of these wards. Their former capacity was 40 patients each, it is now 50 each; and all our pronounced suicidal patients, and many other cases requiring special attention, are placed in these wards where they can be constantly watched night and day, and where every needed attention required by the peculiarities of their condition can be extended to them. Formerly patients of this class were carried in a dozen different wards; and it was impossible to give them the special watching and attention at all times necessary to their safety. In a large asylum where quite a proportion of the patients are melancholy, and consequently suicidal, unless provisions are made for constantly watching them night and day, it will be a peculiar freak of good fortune, if at the end of the year there are no deaths from suicide to report; and even if none are reported, it does not always follow that

none have occurred. The only sure protection and safeguard against suicide is constant watching; and if there be neglect in this respect, somebody sooner or later will have occasion to explain "how it was done."

We have four other wards in our rear sections, two on either side, which by certain alterations, and at a comparatively small cost, could be increased in capacity from 40 to 50 patients each, thus enabling us to accommodate 700 patients. These desirable changes could be made, and all the advantages arising therefrom could be secured, for a sum not exceeding \$4,000. This is a point well worthy of consideration, and is respectfully commended to the earnest attention of the legislature.

THE DISASTER OF OCTOBER TWELFTH.

Allusion has already been made to the loss of life caused by the fire which occurred here on the night of October 12th. By an unfortunate coincidence, at the time the fire occurred, Wednesday evening, a little past eight o'clock, there were assembled in the Asylum amusement hall about 350 patients, enjoying the regular Wednesday evening dance. The fire originated in the drying department of the laundry, the exact point of its origin not being known. The flames spread with wonderful rapidity to the adjoining rooms, including the ironing-room, the large rear building, containing distributing and mending rooms, and also the rooms occupied by the kitchen and laundry girls—numbering about forty—and those of the amusement hall building, containing store-rooms, sewing-rooms, sleeping apartments and employes' dining-room. Almost instantly after the alarm was given the amusement hall was filled with smoke, which was very speedily followed by the flames. All of the male patients escaped injury, and reached their wards in safety; but through the delay caused by going down stairs on the female side, in connection with the accumulation of dense, stifling smoke in the corridor leading to their wards, seven female patients were suffocated. The names and residences of the patients who lost their lives as a result of the fire, are as follows: Charlotte Knowlton, Caroline Knowlton, Eveline Scribner and Jane Bell Hall, all of Ashtabula county; Margaret Pitts, of Lorain county; Lydia S. Kimerle, of Columbiana county; and Margaret Brinkerhoff, of Wayne county. Six of the above number were chronic cases of insanity, and had been in the Asylum for several years. Miss Mary Rice, a resident of Newburgh, and an employe of the Asylum for twenty-five years, was also suffocated by the smoke while attempting to escape. Although it was a severe and bitter calamity—one calculated to shock those of the strongest nerve—it was on the whole, and in view of all the circumstances, a fortunate, and almost a marvelous escape.

The combustible character of the buildings burned, the rapid spread of the fire, the character of our population, the number of patients in the amusement hall, and the wild, panic-stricken state incident to such a scene, all contributed to threaten danger of immense proportions, and to render the occasion an appalling one. Through the timely and very efficient service rendered by the Cleveland Fire Department, under the wise direction of Chiefs Speddy and Rebbeck, the fire was limited to the rear buildings exclusively, and much valuable property and machinery were saved. As our steam-heating apparatus and kitchen were saved, we were enabled the next day to warm and feed our patients as usual.

It is perhaps useless at the present time to refer to the rickety nature and vulnerable qualities of the structures where the fire originated, and which were destroyed. During the twelve years I have had charge of the Asylum, those old buildings menaced me almost constantly. They haunted my dreams, and served as a sort of "Banquo's ghost," lest through fire, calamity might come to us. It finally came, and the lesson taught by it and the sad results arising therefrom, furnish food for serious thought and reflection. It is now a matter of history, and if it shall prove to be "history teaching by example," some measure of good will doubtless be the result. Like many of the troubles of this life, the fire was the result of an evil inheritance. The buildings burned came down to us, the spared relics of the old Asylum, which was burned in 1872, and whose destruction would have proved a still greater blessing, had the structures we inherited been burned at that time, and had there been no loss of precious lives. We confidently look to the coming legislature to replace the buildings recently burned here—laundry, boiler-house and amusement hall building—with permanent fire-proof structures. It would be in keeping with the other portions of the Asylum, and prove a substantial guarantee against a repetition of the calamity of October 12th, which brought the deepest grief and sorrow to many hearts. In view of the painful experience already had on this ground, and the improved light supplied by modern architecture, as applied to the construction of public buildings, it would indeed be unpardonable, nay, criminal, to again expose the State's dependent and helpless wards to the fate of those who have perished here in the past.

ANOTHER SURGICAL CASE.

It will be remembered that in my report of last year a case of hystero-mania was described, which had long been a terror to us all, and which had probably been cured by the removal of the ovaries. The patient, at the time the report was written, was in the Asylum, and gave strong promise of complete recovery, which has since been fully

confirmed by the subsequent history of the case. The operation was made in a private hospital in Cleveland, July, 1886, and the patient afterward returned to the Asylum and remained during her convalescence—a period of several months—after which she returned to her home well, and has remained so since. She is now, a year and a half after the operation, in good flesh, strength and spirits—in a word, well.

We have had another case in our Asylum during the past year—one of hystero-epilepsy—in which the aid of surgery was invoked as a *dernier resort*, and which promises, from present indications, equally as good a result as the case previously reported. The patient is a young lady of nineteen. She was admitted to the Asylum in September, 1886; and had been suffering at the time of her admission for several months from violent and prolonged attacks of hystero-epilepsy, at each recurring menstrual period. After remaining in the Asylum a few months, there came a period of three months during which she had no return of menstruation; and in this interval she had no disturbing symptoms, and was greatly improved in health. On the re-appearance of menstruation, however, the attacks of hystero-epilepsy returned, and were more violent and threatening, if possible, than ever. The approach of each period would be announced by the usual symptoms of dysmenorrhœa, and after a few days had elapsed, well marked symptoms of epilepsy would appear, such as convulsions, unconsciousness, biting of the tongue, frothing at the mouth, and oscillating pupil, followed by coma. These attacks would follow each other in rapid succession, and continue for a week or more; and the whole time from the beginning of disturbing symptoms, would cover, each month, a period of ten or twelve days. She would take very little nourishment during all this time, and would emerge from the attack greatly prostrated; and before fully rallying from the shock and exhaustion consequent upon one attack, premonitions of another would appear. Medicine seemed powerless to control the case. It was clearly apparent that the patient was losing ground; the brain was gradually weakening from these frequent and rapid assaults upon it, and hence the question, what can be done? The more the case was studied and observed, the more evident it became that the ovaries were the chief source of the trouble, and the question of their removal as the only means of relief, was one to be seriously considered. To permit the case to run on and have its own way, thereby resulting in probable ruin to both body and mind, seemed to be unjustifiable, especially in the light of recent triumphs in abdominal surgery, and finally it was concluded to give the patient the chance of relief promised by an operation. In considering the advisability of surgical interference in this case, I was somewhat embarrassed in consequence of its epileptic features, fearing,

perhaps—notwithstanding that the epileptic seizures were of reflex origin—that a sufficiently profound impression had already been made upon the brain to cause their return after the operation. But then, as previously remarked, it was observed in the absence of menstruation for several months, and in the absence of ovarian excitement during that time, that there were no epileptic symptoms, and that a marked improvement followed. Here was a hint, a suggestion, worthy of consideration. Admitting the possibility of the continuance of epileptic seizures subsequent to the operation, it was not unreasonable to conclude that they would be, if not permanently arrested as a result of the operation, decidedly modified. The removal of the ovaries having been determined upon, and the consent of the friends of the patient obtained, she was removed to the Charity Hospital of Cleveland, and placed under the care of Dr. Dudley P. Allen, whose skill, experience and success in abdominal surgery justly entitle him to a position second to none in his department. Dr. Allen performed the operation of oöphorectomy, October —. No unfavorable symptoms from the operation followed; the patient is convalescing very satisfactorily at the present time, with a good prospect of permanent cure. Both ovaries were found diseased, especially the right one, which was a good deal enlarged and encysted. While oöphorectomy has, perhaps, become of late too fashionable an operation, its usefulness—its vital necessity, even—cannot be questioned in a certain class of cases, cases of which the two above reported are a type.

TREATMENT OF THE INSANE.

Although our views here in regard to the treatment of the insane are well-known, and although I have nothing specially new to communicate on the subject, it may be proper to make brief allusions to them at this time lest some of the brethren in our specialty should indulge in the inference that prolonged silence implies a stage of incubation which sometimes precedes new, wonderful and startling revelations. The insane condition manifests itself in a great variety of forms and phases, and calls for a great variety of means, medical, moral and dietary; and a thorough discrimination when they are applied in treatment. In this respect the application of therapeutic means in the treatment of insanity, is much like their employment in the treatment of diseases in general. To ignore a remedy because of its potency for mischief when misapplied, but which is potent for good when properly applied, seems to me both stupid and humiliating. To refuse its employment from sheer prejudice implies an element of bigotry in the physician; to refuse its use under any circumstances because of popular clamor

against it, is a virtual confession of moral cowardice. On this point I cannot refrain from quoting the late Dr. Austin Flint, one of the ablest physicians of this or any other age, who in the very last address that he prepared expressed himself thus: "To carry out the principle of rejecting remedies because they are capable, if used without due discrimination and discretion of doing harm, would be to emasculate the *materia medica*. A remedial agent can have but little value, if it be not capable of acting injuriously as well as usefully. In the ability to employ potential agencies so judiciously as to secure their good and avoid their evil effects, lies the secret of true success in the practice of medicine." Here is food for reflection; a bit of wisdom which we ought to ponder seriously, remembering that it emanated from a source worthy of our most profound regard. Every physician of long practice, and who has had wide opportunities for observation, can doubtless recall numerous instances in his experience wherein popular clamor would, for a brief period at least, threaten to overwhelm and drive legitimate medicine from the field. An illustration of this occurred in a neighboring county several years since. A physician administered to a female patient a hypodermic dose of morphia—whether skillfully or unskillfully, I cannot say,—the patient died very soon thereafter; her death was attributed by the people generally to the hypodermic medication; and no doctor for quite a period of time after that occurrence could, without exciting popular distrust, employ that method of treatment. The old prejudices against the various combinations of mercury, especially calomel, and also blood letting, are illustrative of the same foolishness, which periodically and spasmodically stimulates the public mind against legitimate medicine, and furnishes charlatans and quacks with an opportunity to press their pretentious and empty claims. What broad-minded and conscientious physician at the present day would consent to the exclusion from his list of remedies of the leading preparations of mercury? The great Dr. Flint, already quoted, and in the same address, in speaking of the medicine of the future says: "A fair conclusion is, that by the abandonment of blood-letting, a useful measure of treatment was given up. It was doubtless employed too indiscriminately, and often carried too far. Its dangers and evils were as much overlooked as they are now exaggerated. Its use was not properly regulated by indications and contra-indications. The time will come,—and that ere long, for it is now foreshadowed,—when it will have its proper rank among therapeutic agencies. Physicians will take advantage of the promptness and efficiency of its effect in certain conditions of disease, and will observe a proper conservatism as regards its potency for harm as well as good."

The same reasoning applies with equal force to the treatment and management of the insane condition. It is a more subtle and complex form of disease, one involving pathological points which are more numerous, and of greater interest, and which require a keener discrimination for correct diagnosis, than any other disease; but notwithstanding all this, who has not observed that every dolt in the community feels at liberty to express himself with usual boldness on the subject of insanity? Here is an instance where natural gas can be found without boring for it; but where it is impossible to escape being bored by it. It cannot be denied that through the clamor of cranks, of both high and low degree, a very decided influence is exerted on the minds of many who are entrusted with the management and treatment of the insane, resulting in a decided modification of views and plans relating thereto. An abundance of proof in support of this statement is at hand. An amateur board of trustees of an insane asylum in a neighboring State which was about to be opened a few years ago for the admission of patients, adopted a rule forbidding the use of sedative or narcotic medicines, or any form of restraint in the treatment of the patients of said asylum. Just what privileges and rights were accorded to the medical authorities of that institution, I have never learned; but it must be confessed that it became a *restraint* asylum, so far as its officers were concerned. The superintendant of an English asylum, on being asked if any restraint was employed in his institution, answered, that the patients were not restrained, but that he was. I have said it in previous reports, and repeat it now, that it is sheer effrontery, and that it is the climax of brazen-faced stupidity, for persons unfamiliar with insanity to play the role of dictators in regard to its treatment. No one is entitled to an opinion on the subject unless an ample opportunity has been afforded him to thoroughly study it in its scientific aspects; and this must be supplemented with broad facilities for clinical observation. Very few persons wholly ignorant of mechanics, have reached that state of stupidity—perhaps none outside of a lunatic asylum—that would think of dictating to a skilled architect how he should plan and construct an elaborate edifice. Dictation relating to the treatment of insanity, by those entirely ignorant of the subject, is, in reality, equally absurd and ridiculous. There can be little question but what the non-restraint views, so widely entertained in Great Britain, are very largely due to the abuses practiced upon the insane prior to the time of Connolly. The potency of mechanical restraint for evil, when indiscriminately applied to the treatment of the insane, is readily conceded; and as previously remarked, the same is true of all potent agents which are employed in the practice of medicine and surgery. These agents possess,

as a rule, a corresponding potency for good when discriminately and wisely used ; and to reject them entirely, lest they may do harm if excessively used, or if misapplied, is a virtual confession on our part that we are not masters of the situation. To be what charlatanism is not, men must be capable of going where it can not, and of doing what it dares not. The genuine qualifications possessed by men in very responsible and important departments of human affairs, in departments demanding special training, are those which give them the advantage that intelligence has over ignorance, and which strength always has over weakness. Men thus qualified, trained and equipped, are the proper ones to lead in the work of their respective departments ; but unfortunately they do not always, by any means, exercise the prerogative which legitimately belongs to them. Popular clamor, or perhaps some Sitting Bull who is saturated with conceit and puffed with brief authority, may prove an obstacle to that freedom of action which, under less embarrassing circumstances, would be much more profitably exercised. Probably we all are to some extent, unconsciously and unwittingly, the slaves of popular sentiment ; but no man can long feel that he is "on the rock of ages founded," if even a part of the price paid for public position—especially one of exceptional trust and responsibility—involves a compromise of principle or a surrender of conviction. A glance at the history of every quack system of medicine which has come and gone during the last half-century will reveal the fact that it was based on the doctrine of exclusion, a rejection of some of the established methods of regular medicine, and an abandonment of agencies and remedies of approved value. Agencies powerful for good, and almost of infinite value when rightfully and discriminately employed, but very potent for evil when improperly used, should never be resorted to under any circumstances, is the logic of exclusion. This doctrine, if uniformly followed, would exclude the vivifying influence of the sun's rays from the earth, for fear that their intensity might, under certain conditions, prove destructive to health and life. A beautiful doctrine, indeed, is this when followed out to its logical sequence. Eclecticism, so-called, and all other isms and pathies, and all the different single-remedy plans of medical treatment of the past and present, are simply so many species of the genus, exclusion.

The few general considerations here presented prepare the way, partially at least, for some comments of a more special character in relation to the treatment of the insane. It almost seems superfluous to repeat at this time that I believe in asylums ; in the use of medicine ; and in the occasional employment of mechanical restraint in the treatment of insanity. I never have, however, been vain or stupid enough

to think for a moment that in the presentation of my own views, I was engaged in the ambitious business of erecting a standard for others to follow. I should probably have less to say in my reports on the subject of treatment, especially the restraint feature, were it not for the fact that so much prominence has for a few years past been given to it in this country. Connollyism, or the doctrine of total non-restraint, swept over Great Britain quite a number of years ago like a tidal wave, but the epidemic did not reach this country until a comparatively recent date. It has of late acquired the dimensions, volume and velocity of one of our modern "booms," taking by storm not only the high priests of reform in general, but has captured not a few of our asylum superintendents, who have almost climbed over each other in their haste to reach the stool of repentance, that they might have an opportunity to confess their sins, declare their conversion to the faith of total non-restraint, and be classified among the elect. The one thing needful is to announce to a sinful world that you have embraced this new faith; that you have at last launched your asylum on the sea of reform, and henceforth and forever that no patient, under any circumstances whatever, shall wear any kind of restraint, and perhaps with the additional pledge that no patient hereafter shall be subjected to the murderous effects of any kind of drugs. These two articles of faith—a total abandonment of all kinds of restraint, and a total disuse of all kinds of drugs—fill the full measure of reform, (it is always best to "go the whole hog" when in the reform business) and will enable you to proclaim that all old things have passed away, and that all things have become new, and hence the crown that is waiting for you. These are a few of the precious promises contained in the gospel of non-restraint, and he who fails to avail himself of them is regarded by the new born of the non-restraint fold as one who is blinded by the mists of old fogysm, and in some instances even as being worse than an infidel. Yes, total, absolute non-restraint—both mechanical and chemical—is the great desideratum, and the chief essential to the enjoyment of that peace which passeth all understanding—a peace which makes the understanding of anything else wholly unnecessary.

I am well aware that this restraint question is not a pleasing one to many; but it is difficult to see how its consideration can be avoided, so long as our friends of the total non-restraint persuasion insist with so much tenacity that their method is the all in all of asylum treatment, and at the same time strenuously contend that restraint is the synonym of all that is bad and cruel in the treatment of the insane. Here is a sharp and clearly defined issue; and I as one humble member of the specialty am willing to meet it, and submit the case to the verdict of

time, that just arbiter which sooner or later, in its patient and majestic march down the centuries, settles on an enduring basis all the vexed questions incident to the disputes of mankind. So long as it is contended that non-restraint is the panacea for all asylum ills; that its adoption is a sure guarantee of all that is humane and excellent in the treatment of the insane; and on the other hand, that restraint implies all that is cruel and bad in asylum treatment, there will doubtless continue to be an exchange of shots over the matter, and blows will be given as well as received. One thing has already been demonstrated, and that is, that the enthusiastic adoption of total non-restraint does not in every instance relieve an asylum from unpleasant charges. It is only a few years since that a large asylum a little west of us, in another State, began a new administration of its affairs by burning all of its restraining apparatus, accompanying the same by a public demonstration, and on the following Sunday several ministers made the occasion referred to the theme of their discourse. The bonfire at the asylum was alluded to as an exclamation point in the world's progress, as evidence that we were emerging from the darkness of the barbarous past, and as a striking proof that the millennium was at hand. It was not very long, however, after the grand illumination occurred that trouble came to this heaven-favored institution, and it would hardly be proper to refer to it in this connection, if the various matters relating thereto had not been so freely and extensively discussed, pro and con., by the public press. It was virtually acknowledged by the superintendent of said asylum in his testimony before an investigating committee that its trustees had made contracts with certain parties who furnished for the use of the poor and helpless insane, meat that was diseased—in the incipient stage of gangrene and inhabited—butter that was venerable with age, strongly impressing the olfactory sense by its odoriferous quality, and bread that was too sour to answer the ends of a first-class nutrition. He further acknowledged that he refrained from banishing these objectionable articles of food from the house rather than have the row which would inevitably follow with his trustees. Here is another illustration of non-restraint of the patients, but of restraint of the superintendent. It was claimed by the superintendent and his friends that he would gladly have corrected these abuses, but the trustees controlled the situation. He that should have been first became last, having his own bacon in view rather than the kind complained of.

The logic of the asylum reformer is this: We have abandoned all kind of restraint; like Shakespeare's physic we have thrown it to the dogs, and hence whatever is pure and of good report, can be found here. Our faith has made us whole; and like old Casaubon, we have for many

long and weary years been searching for the key to all mythologies, but unlike him, we have found it. If, by any hook or crook, it should come to pass in process of time, that abuses, like bad sanitation, a disregard of hygienic laws, unwholesome or scanty diet, lack of care, or want of supervision, or injuries to patients, should creep into the management, they would all be condoned by the light and liberty which are alone reflected through the gospel of non-restraint. Then again, what an advantage it is to be *en rapport* with that rapidly increasing army of reformers and saints whose aim, through pen and voice, is the speedy redemption and regeneration of mankind. Surely, when so much that is valuable can be obtained so cheap, it would indeed be the climax of obstinacy and stupidity to refuse to walk in a path so smooth, so straight, and strewn with so many flowers.

I must be permitted, however, to remark here, for the benefit of my zealous friends of the non-restraint persuasion, that the signs of the times, judging from some of the events of the past year, are not so rich with promise for their "boom" as might be desired. Already a crack has appeared in it, and there is possible danger of its collapse. In sounding this note of warning I am moved exclusively by a feeling of benevolence, and by that feeling of sympathy for near and dear friends, which is due them when threatened with impending calamity. I refer here to recently expressed views by distinguished alienists, one an English authority of conceded ability and great experience in the treatment of the insane, and the other an American author who has been regarded heretofore as one of the loudest champions of the non-restraint doctrine, authors who boldly and unequivocally advise the use of mechanical restraint in the treatment of the insane when certain indications present themselves.

At the annual meeting of the "American Neurological Association," held at Long Branch, N. J., on the 20th of July, 1887, Dr. E. C. Spitzka, of New York, read a paper in which he minutely described a grave form of delirium, and discussed somewhat elaborately its pathology. The paper called out considerable discussion, which was participated in by several members of the Association. The following paragraph is quoted from the proceedings: "Dr. Spitzka, in closing the discussion, said that while in theory he was opposed to mechanical restraint in the treatment of the insane, he would find it difficult to get along without such restraint in cases of this kind, as chemical restraint fails when used in a form that would be justifiable." The English authority referred to is Dr. George H. Savage, Superintendent of the Bethlem Insane Asylum of London, and one of the editors of "*The Journal of Mental Science*," the leading publication of the kind in Great

Britain. At a meeting of "The Medico-Psychological Association" of England, held in London, February 23, 1887, Dr. Savage read a paper in which he advocated the use of mechanical restraint in certain cases of insanity; and his views were thoroughly endorsed by a considerable number of the members of the Association. I quote from the paper of Dr. Savage the following extracts: "I shall avoid going into the whole question of non-restraint, and accept as axiomatic that theoretically 'non-restraint' is desirable, though in practice cases may possibly arise in which some mode of restraint has to be followed." "The next axiom I insist upon is that none of us would willingly give a powerful narcotic with no other object than that of producing quiet. I know here the practice differs widely, so that one superintendent's habit, I was going to say conscience, allows him to give a great deal of quieting medicine, while another allows none at all. Both are at fault."

After considering the advantage of strong clothing over certain other methods, Dr. Savage proceeds thus: "I consider that there are certain patients who must not only have strong clothing by day, but need also side-arm dresses at night. Some will deny the necessity, and for those I have simply no answer, as I cannot manage without their use from time to time. What is to be done with a case who will endeavor to gouge out her eyes, or for the man who wishes to emasculate himself? I do not think that a man suffers any more from the restraint of a dress than that of four hands.

"I claim the freedom, then, to use such restraint as I think will give the patient the best chance of recovery."

Subsequently in the discussion of the paper by Dr. Savage, in reply to others he said: "That he fully realized the advantage of having more than one course open in the treatment of patients of destructive habits. To say continually, 'No restraint! no restraint!' would be to imitate those people who, not having very strong faith, repeated the creed constantly."

Dr. Savage was again heard from on the same subject at the late meeting of the "International Congress," held at Washington, in September, of this year. In discussing a paper read by Dr. Tuke, of London, in which the latter declared that strict non-restraint was not feasible, Dr. Savage said: "Youthful alienists might preach the doctrine of Conollyism pure and simple, but so high an ideal could not be attained so long as the preservation of society and the preservation of the patient's life are to be considered."

The conservative views of these distinguished gentlemen and authors are substantially the same which have been held and advocated by the alienists of this country, who have been pointed to by the non-

restraint extremists as clinging to a relic of the dark past in the treatment of the insane. The expression of these views at such a time and place, and emanating from such a source, must have been a surprise to the zealous young converts who had so recently made an open profession of their faith and with such a flourish of trumpets, in the teachings of "strict Conollyism." By an apparent concert of action they had in their reports of the previous year made "an attack all along the line," insisting that the only true basis of enduring peace on this vexed question of restraint, was an "unconditional surrender" of everything pertaining thereto. The cold shower bath to which these lambs were treated at the Washington meeting, must have had a very depressing effect upon them; but it is to be hoped, through the mollifying influence of time, accompanied by the soothing ministrations which will undoubtedly be applied through the superior wisdom and gracious favor of the new *regime* at Utica, that they will rally, and not suffer from any of those troubles of early life which not unfrequently result in stunted growth and premature decay.

LARGE ASYLUMS OBJECTIONABLE.

In some of my former reports I have favored the construction of supplemental buildings on the grounds now used for asylum purposes by the State, not because I thought it the best course to pursue, but because I thought it a better one than the retention of large numbers of the insane in county receptacles—infirmaries and poor-houses. Any kind of a ship is vastly preferable to the open sea, or to small boats which were never designed to resist the gales and storms incident to an ocean voyage. It is the same with asylums for the insane as compared with those objectionable county receptacles where the insane are huddled together, without proper care or protection, and where neglect reigns supreme.

In order to rescue this unfortunate class from a fate worse than death, I have reluctantly sanctioned the idea that it would be advisable under the circumstances to increase the capacity of our asylums for their accommodation, as the State is so very slow to provide new ones. The present tendency in this, and other States, is to build large asylums, or add more capacity to those already built. The State, as represented in its legislature, is reluctant about building new asylums on account of their cost; and when the point is finally reached that a new asylum must be built, all other considerations are subordinated to the one of low cost. The impression widely prevails that a very large asylum can be built and administered at a much less per capita cost than a smaller one. Some recent data and facts which have been collected on this

point would indicate that such an impression is an erroneous one. Take, for instance, the asylum at Kankakee, Illinois, which has a capacity for the accommodation of 1,600 patients. The reports of the insane asylums of Illinois show that the per capita cost at Kankakee is not below the others, with one exception. The new asylum at Toledo is patterned after Kankakee, and it is expected that it will have a capacity for the accommodation of 1,200 patients, which may be increased from time to time, as the future necessities of the insane for more asylum room may require. How much less per capita cost Toledo will be able to show for the support of patients than the other asylums of the State, which are of much less capacity, remains to be seen. If we are to judge by the relative per capita cost of the large and small asylums which have already reported on the subject, it will have very little advantage in that direction. Even if it were true that a large asylum, one of mammoth proportions, could be administered for a little less money, it would not, in my judgment, compensate for some of the obvious disadvantages which the management must labor under in conducting the affairs of such an institution. All must concede, who have had ample opportunities for observation on the subject, that the management of an asylum for the insane, is, as a rule, efficient, satisfactory and successful, in proportion to the degree of individual care and attention which is bestowed upon its patients. The individual care and attention requisite to first-class work, from the nature of the circumstances, cannot be supplied by an asylum that has attained the dimensions of a fair-sized village, with a prospect of becoming, at some future day, a small-sized city. In such institutions the individual is lost in the multitude; the special treatment required in many cases is not forthcoming, and they are permitted to slide along down the hill of dementia, with the great mass of the asylum population. The fault, here, certainly is not with the superintendent or his corps of assistants, or with any connected with the service; it is with the system. The simple fact is, impossibilities are asked at their hands, and they can meet the demands made upon them when it can be demonstrated that it is possible to perform the impossible, and not until then. If it can be shown that the cost for the support of patients in large asylums is equal to the amount paid in small asylums, where a far greater degree of care can be bestowed on the patients, then the bottom drops out of the only argument advanced in favor of the mammoth asylum, namely, the money-saving argument.

In an asylum of 600 patients the superintendent frequently finds more work to do than should be required of one man; but with an efficient staff of medical assistants by his side, a trained, experienced,

and thoroughly loyal corps of supervisors who are ever ready to execute his wishes, and a class of attendants who are honest, faithful, and adapted to the work, he may be able by untiring application to do justice to his charge. Doubtless if the asylum capacity were limited to 400 patients, it would be still better for both the superintendent and the patients. In the latter case, all the time and strength of the superintendent could be profitably employed, and the patients would be correspondingly benefited through the increased individual care and attention which they would receive. Now, if the superintendent of an asylum for the insane can find a field of operations sufficiently broad and extensive, in an asylum having a capacity of 400 patients, to exhaust his time and his best energies, it becomes a very easy matter to understand the obstacles and difficulties which must constantly confront him when he attempts to superintend the affairs of an asylum having a capacity of four times four hundred. It would indeed be marvelous if, some of his numerous irons did not burn. But it may be suggested that he must, under such circumstances, enlarge his medical staff, and delegate authority to others to act for him. This is much more easily said than done. There can be but one authoritative head to such an institution, and as authority and responsibility walk together hand in hand, it is not an easy matter to separate them. It is impossible for those acting in a subordinate capacity in a public institution, or in any department of human affairs, to feel that keen sense of responsibility which is felt by its authorized head. This should neither be asked nor expected.

One of the most important and difficult duties devolving upon the superintendent of an asylum for the insane, is the selection and employment of attendants. This is emphatically a feature of the work which cannot safely be entrusted to any one else. Very few who are not familiar with the workings of such an institution can have the slightest idea how much time, thought and care are required to do full justice to this branch of the work. "Civil service," as applied to the qualifications of attendants, may accomplish something; but it will fall far short of supplying to an asylum all the qualities which are essential to a first-class attendant, especially if too much reliance be placed upon it as a test of qualification. The selection of the forty or fifty attendants required in an asylum having a capacity for 400, or of the selection of the sixty or seventy needed in an asylum caring for 600 patients, will give the superintendent all that ought to be required of him in that direction. When an asylum has reached such proportions that four times that number must be selected and employed, the task becomes a herculean one; and if some persons unworthy of such a trust,

under circumstances so disadvantageous, should not succeed in crawling into the service, it would indeed be marvelous. Another point not to be lost sight of in connection with this matter of attendants is the vital necessity of giving them instruction in regard to the care of patients, and drilling them in all the duties pertaining to their work. And further, a thorough and detailed supervision over them in all their relations with the patients, is essential to a good and acceptable service, and without such supervision it cannot be reasonably expected; and the manner in which this service is performed should be *known* by the superintendent. From the very important and intimate relations which the attendants of an asylum bear to the patients, it is almost as essential that the qualities of the former be studied—their adaptation to, and their fitness for the delicate tasks assigned them—as it is to study and observe the condition of the latter. How can this be done in one of those monster asylums where the number of attendants is almost equal to the number of patients in some asylums which furnish plenty of work for those who have the management of their affairs? Individual care and attention to details are impossible where so many patients are massed together, and as it is conceded that such care and attention are indispensable to good results, the conclusion is obvious, that the asylum which cannot furnish these has missed its mission, and that the system of which it is the offshoot should be condemned and abandoned.

A very large asylum, one with a capacity of 1,200 or 1,600 patients, must necessarily, especially in this country, draw a large part of its population from a broad territorial area, thus placing many patients at an inconvenient distance from their friends. This is in some respects a serious objection. Patients are often greatly comforted to know that their friends are near them, and that they can hear from them, and receive visits from them frequently. The friends of patients, too, greatly appreciate such advantages. It not unfrequently happens that a patient becomes very suddenly and dangerously sick, through some new complication in his case, rendering it highly important that the friends be speedily informed, that they may be enabled to hasten to the bedside of the patient, and perhaps be with him in his last hours. This is very difficult, and sometimes impracticable, where the distance between the patient and his friends is very considerable. Many a husband is too poor to spend the time and money to visit his wife who is a patient in an asylum, if the latter be located at such a distance from his home that he cannot make the round trip in one day.

The same is true of others who would gladly visit their relatives who are confined in asylums, but are in some instances precluded from

so doing, on account of the distance to be traveled, and the expense involved in making the trip. It is not only an advantage and great convenience to patients and their friends to be so near each other that they can, if need be, see each other frequently, and on short notice; but it is also an advantage to the asylum. Those members of the community who have the best opportunities to familiarize themselves with the workings of a well regulated and properly conducted asylum for the insane, through frequent visits, are the least distrustful and the most appreciative of any others, especially if they are candid and intelligent persons. Many persons, without special reasons but simply on general principles, are strongly prejudiced against asylums; and have an almost unspeakable dread of placing relatives in them for treatment. When compelled at last to do so, however, the opportunity of the asylum has come to disburse the minds of such persons, and to prove to them its claims on their confidence by its intelligent, humane, and excellent work. Thus it is that patients, their friends, and the asylum itself, are mutually benefited, when the latter is easily and readily accessible to that portion of the public which it serves. In a very large asylum, one which draws a considerable portion of its population from long distances, and which is compelled from the nature of the circumstances, to do its work on a collective instead of an individual scale, these mutual benefits are comparatively few and far between, and in many instances can only be enjoyed through an expensive sacrifice. These are a few of the many reasons why I believe the mammoth, modern asylum for the insane objectionable, and not adapted to meet many important requirements.

Another, but very serious objection to compelling patients to travel a long distance before reaching an asylum, is this: Quite a number of insane persons, especially patients suffering from those forms of insanity wherein the brain is greatly exhausted, can scarcely endure even a short journey to an asylum. When the distance is considerable, it may turn the scale against the patient, by extinguishing the narrow margin of brain energy left him when he began his journey. Hence the difference between a short and long journey to an asylum may be the difference between the life and death of the patient.

CHANGES IN OUR DISTRICT.

The Legislature of last year passed an act reorganizing the several asylum districts of the State. By this act Lorain, Stark and Wayne counties were taken from our district and placed in the Toledo asylum district, and it was provided that when the new asylum at Toledo is completed the patients from these counties, numbering about 140, sha -

be transferred from our institution to the latter. The object aimed at by the Legislature in placing these counties in the Toledo district was doubtless for the purpose of relieving, to some extent, at least, the insane of our district now confined in county infirmaries. A mere glance, however, at the actual condition of things in our district will conclusively show that the proposed relief will amount to but very little. Several of the remaining counties of our district are already in excess of their quotas, and further, we must be prepared to admit the occurring cases, or those recently adjudged insane. It would be little less than folly to fill the places made vacant by the removal of patients to Toledo with chronic cases from the infirmaries when it is exceedingly probable that in a very short time the latter would be compelled to return to the counties in order to provide room for new patients. Relief to the insane of this portion of the State can never come until a new asylum is built for their special accommodation. This is imperatively called for by the necessities of the situation, for we have at the present time in the thirteen counties formerly composing this district, a sufficient number of insane persons to fill two asylums having a capacity of 650 patients each. The attention of the Legislature has been called to this matter over and over again, but so far, all appeals on the subject have proved unavailing. Neither is the prospect for immediate relief at all flattering. Whenever the subject is broached the same old cry of a depleted treasury is heard, and hence the necessity of waiting for "a more convenient season" before doing anything for the relief of the neglected insane of the State; and judging from present indications the said convenient season will continue, as heretofore, to be indefinitely postponed. If the wealth and resources of the State did not more than keep pace with the growing needs of those who are dependent on its charity, the excuse for this delay would, at least, seem more plausible, but such is not the case. Facts, reason and duty are all arrayed against such a short-sighted policy, for the State is able a thousand times over, to make all needed provision for the necessary care of its neglected insane, and it would be speedily done if the legislative mind were not from year to year weighted down with the idea that an increase of taxation would weaken the political grip of the party in power. This idea is a bugbear, "a false creation," having no foundation in fact. It is a very great pity that legislators cannot see this matter in its true light, dismiss their timidity, and with an open and generous hand discharge their obligations to a suffering class which the State has voluntarily and repeatedly pledged itself to protect. It is absurd to suppose that judicious, honorable and humane measures, looking to the relief of the wards of the State would not be heartily endorsed by the masses of her people.

It is true that the State does occasionally build an asylum, but this is done at such long intervals that we have on hand, by the time it is completed, an accumulated mass of chronic insane persons whose numbers are not diminished thereby. From the rapid increase of our population we should expect a relative increase in the number of our insane, and an exercise of the same common sense and business principles which we apply to other matters would naturally suggest that we go forward and prepare to meet the increasing demands thus made upon us.

The State should be dotted over with asylums possessing a capacity of five or six hundred each, thus enabling those having the medical charge of patients to individualize their treatment, and there should be a sufficient number of these institutions to accommodate every insane person in the State, whether the case be a recent or chronic one. This course would prove an incalculable advantage to those in charge of the asylums, to the patients themselves, and to their friends. The inconvenience and disadvantages of having a few large asylums in the State located at great distances apart are illustrated in the recent changes about to take place in our own district. Lorain is an abutting county to the one in which this asylum is located, but the Legislature in its wisdom deemed it best to place it in the Toledo district, which will greatly add to the distance to be traveled by patients and friends, and it will prove an awkward arrangement for the asylum to which the patients of Lorain have been assigned. It will also prove very inconvenient for Stark county which, is much nearer Cleveland than Toledo.

A GLANCE AT OUR PAST.

It is now twelve years since my work began here, and although my highest ideal has not been attained, and probably would not be were I to remain much longer, yet, in reviewing the time covered by that period I find abundant cause for gratification in both the dangers which have been escaped and the good which has been accomplished. The institution at that time—December, 1875—had been recently rebuilt and much enlarged, and was in condition to do good work. During the twelve years, there have been received here, in round numbers, 3,000 patients, and about the same number has been discharged. The permanent recoveries on the number admitted have very nearly equaled 33 per cent. The number of patients admitted each year for twelve years past has averaged 250. The total number under treatment each year has been 880. The average number under treatment each year has been 630, and the average number of deaths on the total number under treatment for the whole period (12 years) has not exceeded 4 per cent., and

on the average number it has not exceeded 5 per cent. During the 12 years we have had six suicides, and in two of these cases death was due to a failure on the part of those having charge of them to carry out the special instructions given them by the medical officers of the asylum. Fortunately there is not a single case of homicide to record. In view of the large number of melancholy patients we have admitted each year, the small number of suicides which has occurred during the twelve years is a source of gratification, and implies no small degree of care, vigilance and watchfulness on the part of those to whom this peculiarly trying class of patients was entrusted. With our improved facilities for the special care and watching of the suicidal, the facilities furnished us by the new hospital wards which we have provided during the last year, the occurrence of suicide in our asylum is, at the present time, almost an impossibility.

The average per capita cost per annum, including salaries of officers, for the twelve years has been \$170; per capita cost per week, \$3.25. Exclusive of salaries of officers it has been \$162 per annum, and \$3.10 per week. While our per capita cost has been considerably below the average amount paid for the support of patients by the asylums of the country generally, we have not been disposed to join in a Cheap-John race for the prize which is sometimes awarded to a spurious economy. Whenever every other interest pertaining to the affairs of an asylum is subordinated to a low per capita cost, the time has come to invoke, in behalf of the patients, the mercy of the Lord.

ACKNOWLEDGMENTS.

Drs. Burton, Carpenter and Leonard, the assistant physicians, still continue in the service of the asylum, and having the advantage of enlarged experience, are enabled to add more efficiency to the good work which has heretofore characterized their efforts in behalf of the patients. Their loyalty, fidelity and professional zeal are appreciated by me, and I take pleasure in expressing to them a renewed sense of my obligation.

I desire to express my obligations to the following persons, some of whom have been engaged in the work here for many years, and whose long and faithful service entitles them to the highest regard and fullest confidence of their associates in the work here, the friends of patients and the public. This list embraces Mr. Diehl, the steward, who has rendered to the State, in his department, valuable and faithful service since 1874; Mr. Gallagher, the store-keeper, who has done faithful service in different positions here for many years; Mr. Reed, the engineer, Mr. Pellow, the carpenter, Mr. Leitch, the gardener, Mr. Kohlman, the dairyman, Mr. Karber, the baker, are all veterans in the work

here, and deserve for their faithfulness the hearty thanks of the asylum authorities.

The male supervisors, Messrs. Rowles and Reese, the female supervisors, Misses Cox, Tiffany and Hendrickson; Mr. Smith, Misses Clark and Elliot of the night-watch service; Mr. Powers and Miss Sloane of the night attendant service; Mr. Standart, the druggist, are entitled to, and will please accept my thanks for the satisfactory manner in which they have performed their important and responsible duties. To the attendants in our service I desire to express my obligations for the faithfulness, patience, kindness and efficiency which have characterized their work during the year.

The following persons have, during the year, conferred special favors upon us, from time to time, for which I desire, on behalf of the institution, to present them my sincere thanks: Mr. J. L. Brainerd and choir; Rev. Mr. Hollingshead, Rev. Mr. Ludlow, Rev. Mr. Wight, Mr. W. A. Galpin, Mr. J. B. Lang, Dr. G. W. Phinney and Prof. J. A. Roch.

Words can never express our obligations to the Fire and Police Department of Cleveland for services rendered us at the time of the fire in October.

The following newspapers have been sent to us gratuitously during the past year, and the publishers will please accept, in behalf of our patients, my grateful acknowledgments for the same:

Ashtabula Telegraph,	Massillon Independent,
Buckeye State,	Oberlin Review,
Canton Repository,	Oberlin News,
Cleveland Leader (daily),	Ohio State Journal,
Cleveland Anzeiger (daily),	Painesville Telegraph,
Cleveland Plain Dealer (daily),	Republican Democrat,
Cleveland Sunday World,	Reading Idler,
Cleveland Daily Press,	Sandusky Democrat,
Cleveland Sunday Sun,	Stark County Democrat,
Cleveland Trade Review,	Trumbull County Independent,
East End (Cleveland) Signal,	Wadsworth Enterprise,
Evangelical Messenger,	Western Christian Advocate,
Elyria Republican,	Western Reserve Chronicle,
Fremont Journal,	Wayne County Democrat,
Geauga Republican,	Wooster Republican.
Garrettsville Journal,	

Gentlemen of the Board, I gladly avail myself of this opportunity to return you my gratitude for the many evidences you have given me of your good-will and confidence. While a continuance of our official relations may be involved in uncertainty, there can be no doubt what-

ever of the strength, perpetuity and friendship of our personal relations. Wherever our lots may be cast in the future, I am confident that it will be your wish, as well as my own, that the good work here will continue to grow and yield still richer blessings than any which have crowned its past.

JAMIN STRONG.

Cleveland Asylum for the Insane, November 16, 1887.

TABLE II.—OF ADMISSIONS.

	Males.	Females.	Total.
Patients in the hospital November 15, 1886.....	314	311	625
“ admitted during the year.....	141	133	274
“ discharged during the year	119	129	248
“ under treatment during the year.....	455	444	899
“ remaining in the hospital November 15, 1887 ...	335	316	651
Daily average for the year	325.2	319.1	644.3

TABLE III.—OF DISCHARGES.

	Males.	Females.	Total.
Recovered	43	56	99
Improved	33	32	65
Unimproved	25	27	52
Died.....	18	13	31
Not insane.....	.....	1	1

TABLE IV.—OF ADMISSION AND DISCHARGES FROM THE OPENING OF THE INSTITUTION.

	Males.	Females.	Total.
Admitted	3207	3354	6561
Discharged recovered.....	1241	1327	2568
“ improved	509	670	1179
“ unimproved	708	763	1471
“ died	408	281	689
Not insane	2	1	3

TABLE V.—SHOWING THE CIVIL CONDITION OF THOSE ADMITTED.

Condition.	Within the year.			From the beginning.		
	Males.	Females.	Total.	Males.	Females.	Total.
Married	75	90	165	1586	2089	3675
Single	60	27	87	1484	982	2466
Widowed	6	16	22	115	268	383
Unknown .....	.....	.....	.....	24	13	37
Totals	141	133	274	3209	3352	6561

TABLE VI.—SHOWING THE AGES OF THOSE ADMITTED.

Age.	Within the year.			From the beginning.		
	Males.	Females.	Total.	Males.	Females.	Total.
Less than 15 years.....				12	12	24
Between 15 and 20 years...	4	5	9	182	152	334
“ 20 “ 25 “ ...	10	12	22	428	402	830
“ 25 “ 30 “ ...	22	18	40	431	466	897
“ 30 “ 35 “ ...	17	16	33	391	432	823
“ 35 “ 40 “ ...	24	22	46	403	422	825
“ 40 “ 45 “ ...	16	15	31	343	392	735
“ 45 “ 50 “ ...	17	19	36	259	355	614
“ 50 “ 55 “ ...	11	8	19	227	290	517
“ 55 “ 60 “ ...	9	8	17	185	189	374
“ 60 “ 65 “ ...	5	6	11	133	125	258
“ 65 “ 70 “ ...	4	3	7	96	62	158
“ 70 “ 75 “ ...	1	1	2	53	23	76
“ 75 “ 80 “ ...	1		1	19	8	27
“ 80 “ 85 “ ...				12	1	13
“ 85 “ 90 “ ...				3		3
Unknown				32	21	53
Totals	141	133	274	3209	3352	6561

TABLE VII.—SHOWING THE DURATION OF INSANITY OF THOSE ADMITTED.

Duration.	Within the year.			From the beginning.		
	Males.	Females.	Total.	Males.	Females.	Total.
Less than 1 month.....	31	20	51	68	64	132
Between 1 and 3 months...	28	31	59	1148	1172	2320
“ 3 “ 6 “ ...	16	23	39	415	506	921
“ 6 “ 9 “ ...	14	14	28	286	356	642
“ 9 “ 12 “ ...	2	2	4	76	98	174
“ 12 “ 18 “ ...	18	11	29	407	405	812
“ 18 “ 24 “ ...	6	3	9	10	7	17
“ 24 “ 30 “ ...	7	12	19	21	18	39
“ 30 “ 36 “ ..		2	2	171	171	342
“ 36 “ 42 “ ...	3	1	4	6	7	13
“ 42 “ 48 “ ...				74	104	178
“ 4 “ 5 years.....	3	1	4	5	2	7
“ 5 “ 6 “		2	2	84	87	171
“ 6 “ 7 “	1	2	3	3	4	7
“ 7 “ 8 “						
“ 8 “ 10 “	2	1	3	69	104	173
“ 10 “ 12 “						
“ 12 “ 14 “						
“ 14 “ 16 “		1	1		2	2
“ 16 “ 18 “						
“ 18 “ 20 “						
More than 20 years	1		1	94	97	191
Unknown	9	6	15	263	144	407
Not insane		1	1	9	4	13
Totals	141	133	274	3209	3352	6561

TABLE VIII.—SHOWING THE NUMBER OF ATTACKS.

Attack.	Within the year.			From the beginning.		
	Males.	Females.	Total.	Males.	Females.	Total.
First	99	99	198	2281	2375	4656
Second	27	19	46	512	564	1076
Third	7	9	16	157	161	318
Fourth	5	4	9	69	61	130
Fifth				25	40	65
Sixth	1		1	9	13	22
Seventh	1		1	6	8	14
Eighth				2	7	9
Ninth					13	13
Tenth				1	6	7
Eleventh					3	3
Twelfth					1	1
Thirteenth					1	1
Unknown	1	1	2	138	95	233
Not insane		1	1	9	4	13
Totals	141	133	274	3209	3352	6561

TABLE IX.—SHOWING THE NATIVITY OF THOSE ADMITTED.

Nativity.	Within the year.			From the beginning.		
	Males.	Females.	Total.	Males.	Females.	Total.
Connecticut	1		1	72	76	148
Delaware					1	1
Indiana		1	1	2	11	13
Illinois	1		1	2	9	11
Iowa	1		1	3	4	7
Kentucky				5	2	7
Maine				3	10	13
Maryland	2	1	3	23	13	36
Massachusetts		2	2	54	73	127
Michigan	1	2	3	9	13	22
New Hampshire				12	9	21
North Carolina				5	4	9
New Jersey		1	1	18	19	37
New York	9	9	18	264	306	570
Ohio	70	73	143	1369	1414	2783
Pennsylvania	8	11	19	226	221	447
Rhode Island				1	6	7
Vermont	1		1	41	34	75
Virginia				22	17	39
Wisconsin		1	1		5	5
Missouri				1	1	2
West Virginia	1		1	3	2	5
Tennessee				1		1
Louisiana				1		1
Texas				1		1

TABLE IX—Continued.

Nativity.	Within the year.			From the beginning.		
	Males.	Females.	Total.	Males.	Females.	Total.
<i>Foreign Countries.</i>						
Austria.....				3	1	4
Baden.....				4		4
Bavaria ...	1		1	14	2	16
Belgium.....				3	1	4
Bohemia	1		1	18	14	32
Canada.....	2	2	4	33	49	82
Denmark... ..				1		1
England.....	11	3	14	141	125	266
France				17	17	34
Germany.....	13	13	26	345	326	671
Hungary	3	1	4	6	1	7
Holland				5	6	11
Ireland.....	4	7	11	205	313	518
Isle of Man.....				5	4	9
Norway						
Nova Scotia.....					3	3
Poland					4	4
Prussia.....	2		2	15	17	32
Saxony				1	1	2
Scotland	2	2	4	29	22	51
Sweden	1	1	2	6	5	11
Switzerland.....	2	1	3	29	32	61
Wales.....	1	2	3	34	23	57
Italy				3	1	4
New Brunswick.....					3	3
Portugal.....				1		1
Russia.....				4	1	5
East Indies	1		1	1		1
Unknown	2		2	148	131	279
Totals.....	141	133	274	3209	3352	6561

TABLE X.—SHOWING THE COUNTIES FROM WHICH PATIENTS HAVE BEEN ADMITTED.

Counties.	Within the year.			From the beginning.		
	Males.	Females.	Total.	Males.	Females.	Total.
Ashland.....				16	15	31
Ashtabula.....	7	11	18	161	185	346
Athens.....				2	1	3
Belmont.....				4	4	8
Carroll				17	16	33
Columbiana	11	10	21	177	202	379
Coshocton				2	1	3
Crawford.....				5	5	10
Cuyahoga	49	41	90	889	909	1798
Defiance					1	1
Delaware.....					1	1

TABLE X—Continued.

Counties.	Within the year.			From the beginning.		
	Males.	Females.	Total.	Males.	Females.	Total.
Erie.....				66	101	167
Fairfield				2	3	5
Fayette				2	.....	2
Franklin				4	3	7
Fulton				12	22	34
Gallia				5	3	8
Geauga.....	5	3	8	53	63	116
Guernsey .....				.....	2	2
Hancock				7	8	15
Hamilton				1	1	2
Harrison				3	3	6
Hocking				2	.....	2
Holmes				21	15	36
Huron				65	88	153
Jackson				1	2	3
Jefferson				15	9	24
Knox				5	7	12
Lake	3	5	8	128	91	219
Lawrence .....				.....	2	2
Licking				3	3	6
Lorain	9	7	16	166	161	327
Lucas	1	1	2	44	46	90
Mahoning	7	6	13	177	174	351
Marion.....				7	5	12
Medina	7	4	11	88	106	194
Meigs				1	1	2
Monroe				1	1	2
Montgomery				1	1	2
Morgan				2	1	3
Morrow				6	4	10
Muskin.....				2	.....	2
Ottawa.....				18	17	35
Pickaway.....				1	1	2
Pike				2	1	3
Portage	7	6	13	135	172	307
Putnam .....				.....	1	1
Richland				9	9	18
Ross				3	1	4
Sandusky				52	54	106
Seneca				51	47	98
Stark.....	18	13	31	198	222	420
Summit	9	12	21	186	216	402
Trumbull.....	5	5	10	200	127	327
Tuscarawas.....				23	42	65
Union				4	.....	4
Vinton.....				1	.....	1
Washington .....				.....	6	6
Wayne.....	3	9	12	123	122	245
Williams				18	13	35
Wood				21	29	50
Wyandot.....				.....	3	3
Totals	141	133	274	3209	3352	6561

TABLE XI.—SHOWING THE OCCUPATION OF THE MALES ADMITTED.

Occupation.	During the year.	Total.	Occupation.	During the year.	Total.
Agents	1	32	Hatters		2
Artists		3	Harness-makers		7
Auctioneers		1	Hack-drivers		7
Architects		1	Insurance agents... ..		1
Baggage-masters		3	Inventors		3
Blacksmiths	2	55	Iron-rollers	2	3
Butchers	1	14	Jewelers		19
Bakers		9	Laborers	17	451
Brewers		5	Lawyers	1	22
Book agents			Liverymen		2
Book-keepers	3	25	Merchants	2	75
Book-binders	1	6	Millers		15
Boatmen		6	Millwrights		1
Basket-makers		2	Milk-dealers		1
Boiler-makers	1	5	Moulders	2	21
Brick-makers	2	3	Marble-cutters		3
Broom-makers		1	Manufacturers	1	9
Brush-makers		2	Machinists	2	39
Barbers		5	Musicians	1	9
Brakesmen		5	Miners	4	63
Carpenters	8	133	Masons	3	36
Contractors		3	Mechanics	1	33
Clerks	7	77	Nailors		1
Carriage-trimmers		3	Pattern-makers	1	4
Clergymen	1	27	Paper-hangers		1
Cabinet-makers		12	Policemen	2	6
Cheese-makers		2	Powder-makers		1
Carriage-makers		9	Plumbers	1	4
Chain-makers		1	Physicians		23
Cigar-makers		2	Printers	1	19
Coal-dealers		1	Plasterers		10
Commercial travelers		2	Painters	1	41
Collectors		2	Potters	2	9
Coopers	1	20	Peddlers	2	14
Coppersmiths		2	Porters		1
Confectioners		4	Phrenologists		2
Dentists		3	Photographers		7
Detectives		2	Puddlers	1	13
Draymen	1	3	Pump-makers		1
Drovers		1	Railroad conductors	1	8
Druggists		13	Real estate dealers		1
Draughtsmen		1	Railroad Auditors		1
Engravers		1	Reporters		1
Engineers	3	28	Students		55
Editors		2	Saddlers		4
Expressmen		2	Shoemakers	2	54
Farmers	41	1164	Stone-masons	1	20
Firemen	1	6	Spinners		1
Gardeners	2	11	Sailors		16
Grocers	2	13	Ship-carpenters		5
Glass-blowers	1	2	Saloon-keepers		19
Grape-growers		3	Soldiers		9
Hotel-keepers	1	11	Speculators	1	14

TABLE XI—Continued.

Occupation.	During the year.	Total.	Occupation.	During the year.	Total.
Sup't of furnace.....		1	Upholsterers		1
Tanners.....		2	Unknown.....	4	163
Teachers.....	1	30	Undertakers.....		2
Tailors.....	1	28	Veterinary Surgeons.....		3
Tinners	1	5	Weavers		3
Teamsters		11	Wagon-makers		10
Telegraphers	2	13			
Tobacconists.....		2	Totals.....	141	3209

TABLE XII.—SHOWING FORM OF INSANITY OF THOSE ADMITTED.

Form.	Within the year.			From the beginning.		
	Males.	Females.	Total.	Males.	Females.	Total.
Dementia	10	1	11	84	58	142
“ acute.....				25	13	38
“ chronic				44	17	61
“ senile				20	8	28
Imbecility.....	1		1	15	6	21
Kleptomania					1	1
Mania, acute.....	4	10	14	1109	1185	2294
“ chronic.....	1		1	387	426	813
“ hysteric					17	17
Melancholia	45	71	116	952	1285	2237
Monomania				36	29	65
Nymphomania					3	3
Not stated.....				88	55	143
Not insane		1	1	8	4	12
General paralysis.....	17	2	19	97	8	105
Dipsomania	4		4	62	3	66
Mania.....	59	45	104	280	221	501
“ puerperal		3	3		15	15
Totals	141	133	274	3209	3352	6561

TABLE XIII.—SHOWING THE ALLEDGED PHYSICAL CAUSES OF INSANITY OF THOSE ADMITTED.

Causes.	Within the year.			From the beginning.		
	Males.	Females.	Total.	Males.	Females.	Total.
Amenorrhœa					14	14
Apoplexy				5	4	9
Asthma				1		1
Abortion		1	1		4	4
Bronchitis					1	1
Catarrh					3	3
Constipation.....				1	3	4
Climacteric.....		31	31		290	290
Chorea.....				4	5	9
Coup de soleil						
Chronic diarrhœa.....				2		2
Diphtheria					2	2
Dyspepsia		1	1	16	7	23
Disease of the prostate gland..				1		1
Dysmenorrhœa					3	3
Dissipation	7		7	51	3	54
Excessive physical exertion..	5		5	67	46	113
Exposure	1		1	23	3	26
Epilepsy	1		1	47	26	73
Erysipelas.....				1	2	3
Fever				18	24	42
“ intermittent		1	1	14	6	20
“ remittent.....				11		11
“ typhoid		1	1	19	18	37
Fistula					1	1
Gout				1		1
Gestation					33	33
Hydrocephalus				1		1
Hysteria					10	10
Hereditary	9	8	17	92	103	195
Hepatitis				7	3	10
Injury to head.....	4		4	75	11	86
Ill health	8	13	21	169	313	482
Intemperance	14	2	16	305	27	332
Ill treatment				6	23	29
Inanition.....					1	1
Insolation	2		2	34	6	40
Jaundice				1		1
Loss of sleep				4	1	5
Loss of arm				1		1
Lactation, excessive.....					24	24
Masturbation	2		2	313	15	328
Malpractice				1	1	2
Menstrual irregularities.....		4	4		166	166
Measles				1	2	3
Meningitis				3		3
Nephritis.....				3	2	5
Nymphomania					1	1
Neuralgia				1	3	4
Nostalgia.....					2	2
Opium, excessive use of.....		1	1	8	14	22
Old age	1		1	17	11	28
Organic disease of the brain..	2	2	4	11	2	13
Otitis				2	2	4

TABLE XIII—Continued.

Causes.	Within the year.			From the beginning.		
	Males.	Females.	Total.	Males.	Females.	Total.
Ovarian disease					3	3
Poverty				1		1
Poison				4		4
Phthisis pulmonalis				2	3	5
Paralysis				9	2	11
Phrenitis				7	4	11
Puerperal		11	11		232	232
Pneumonia				1	6	7
Pericarditis					2	2
Pubescence		4		1	4	5
Recurrent	2	1	6	17	27	44
Rheumatism			1	4	7	11
Spermatorrhœa				8		8
Spinal affection	2		2	18	9	27
Scrofula				1	2	3
Scarlatina				7	3	10
Sexual excess				10		10
Shock				1	5	6
Sedentary habits				1	1	2
Syphilis	1	1	2	14	2	16
Suppress. of cutaneous erupt.				4		4
Snuff, excessive use of					4	4
Seduction		1	1		9	9
Tobacco, excessive use of				5	1	6
Use of poisonous hair-dyes					1	1
Uterine diseases					128	128
Varioloid				1	1	2
Unknown	59	28	87	1113	877	1990
Not insane		1	1	2	1	3
Totals	120	112	232	2568	2575	5143

TABLE XIV.—SHOWING MORAL CAUSES OF INSANITY OF THOSE ADMITTED.

Causes.	Within the year.			From the beginning.		
	Males.	Females.	Total.	Males.	Females.	Total.
Anxiety	2	.....	2	27	24	51
Business perplexities.....	2	.....	2	96	16	112
Crusading.....	.....	.....	.....	.....	1	1
Domestic difficulties	5	8	13	91	242	333
Disappointed affection	1	.....	1	46	58	104
Disappointment	2	2	4	14	19	33
Excessive mental exertion.. ..	.....	3	3	50	27	77
Fright.....	.....	.....	.....	15	26	41
Grief at loss of friends	1	1	2	35	102	137
Grief.....	1	6	7	5	39	44
Jealousy	1	1	2	15	21	36
Joy .....	.....	.....	.....	1	.....	1
Loss of property	1	.....	1	73	26	99
Millerism.....	.....	.....	.....	1	1	2
Political excitement.....	.....	.....	.....	6	1	7
Remorse .....	.....	.....	.....	4	4	8
Spiritualism .....	.....	.....	.....	22	27	49
Seclusion.....	.....	.....	.....	1	1	2
Religious excitement.....	3	.....	3	124	129	253
War excitement .....	.....	.....	.....	.....	3	3
Uncontrolled temper.....	.....	.....	.....	1	5	6
Financial trouble	2	.....	2	14	5	19
Totals	21	21	42	641	777	1418

TABLE XV.—SHOWING FORM OF INSANITY OF THOSE RECOVERED.

Form.	Within the year.			From the beginning.		
	Males.	Females.	Total.	Males.	Females.	Total.
Dipsomania	2	.....	2	38	2	40
Dementia, acute	3	.....	3	30	16	46
Mania, puerperal .....	.....	2	2	.....	25	25
“ acute.....	3	3	6	544	549	1093
“ chronic.....	.....	.....	.....	110	90	200
“ hysteric .....	.....	.....	.....	.....	6	6
Melancholia	11	25	36	355	501	856
Not stated.....	.....	.....	.....	30	29	59
Not insane .....	.....	1	1	9	3	12
Mania.....	24	26	50	126	108	234
Totals	43	57	100	1242	1329	2571

TABLE XVI.—SHOWING DURATION OF TREATMENT OF THOSE RECOVERED.

Duration.	Within the year.			From the beginning.		
	Males.	Females.	Total.	Males.	Females.	Total.
Less than 1 month.....	.....	.....	.....	28	24	52
Between 1 and 3 months...	12	7	19	216	202	418
“ 3 “ 6 “ ...	10	20	30	344	436	780
“ 6 “ 9 “ ...	9	10	19	277	278	555
“ 9 “ 12 “ ...	7	7	14	134	133	267
“ 12 “ 18 “ ...	1	5	6	121	117	238
“ 18 “ 24 “ ...	2	4	6	46	60	106
“ 24 “ 30 “ ...	1	.....	1	31	31	62
“ 30 “ 36 “ ...	.....	1	1	6	16	22
“ 3 “ 4 years .....	.....	1	1	17	12	29
“ 4 “ 6 “	1	1	2	9	11	20
“ 6 “ 8 “ .....	.....	.....	.....	2	4	6
“ 12 “ 13 “ .....	.....	.....	.....	1	.....	1
Not insane.....	.....	1	1	9	3	12
Totals	43	57	100	1241	1327	2568

TABLE XVII.—SHOWING DURATION OF TREATMENT OF THOSE IMPROVED.

Duration.	Within the year.			From the beginning.		
	Males.	Females.	Total.	Males.	Females.	Total.
Less than 1 month.....	.....	.....	.....	11	12	23
Between 1 and 3 months...	2	4	6	52	69	121
“ 3 “ 6 “ ...	8	3	11	79	125	204
“ 6 “ 9 “ ...	3	5	8	64	103	167
“ 9 “ 12 “ ...	6	6	12	53	66	119
“ 12 “ 18 “ ..	6	5	11	72	94	166
“ 18 “ 24 “ ...	1	.....	1	39	40	79
“ 24 “ 30 “ ...	1	3	4	32	42	74
“ 30 “ 36 “ ...	.....	.....	.....	20	21	41
“ 3 “ 4 years	4	2	6	37	43	80
“ 4 “ 5 “ .....	.....	1	1	19	23	42
“ 5 “ 6 “ .....	.....	2	2	6	13	19
“ 6 “ 8 “ .....	.....	.....	.....	10	12	22
“ 8 “ 10 “ .....	.....	1	1	4	3	7
Over 10 years.....	2	.....	2	7	1	8
Eloped .....	.....	.....	.....	.....	.....	.....
Totals	33	32	65	505	667	1172

TABLE XVIII.—SHOWING DURATION OF TREATMENT OF THOSE UNIMPROVED.

Duration.	Within the year.			From the beginning.		
	Males.	Females.	Total.	Males.	Females.	Total.
Less than 1 month.....	1	1	2	22	22	44
Between 1 and 3 months...	2	1	3	47	24	91
“ 3 6 “ ...	2	2	4	66	60	126
“ 6 9 “ ...	.....	2	2	32	47	79
“ 9 12 “ ...	2	2	4	50	36	86
“ 12 18 “ ...	5	4	9	90	99	189
“ 18 24 “ ...	1	2	3	43	60	103
“ 24 30 “ ...	2	.....	2	71	96	167
“ 30 36 “ ...	1	3	4	43	43	86
“ 3 4 years.....	2	3	5	73	83	156
“ 4 5 “	1	2	3	50	54	104
“ 5 6 “	2	1	3	50	25	75
“ 6 8 “ .....	.....	1	1	35	47	82
“ 8 10 “	2	1	3	24	30	54
“ 10 12 “	2	1	3	6	13	19
“ 12 18 “ .....	.....	1	1	6	4	10
Totals.....	25	27	52	708	763	1471

TABLE XIX.—SHOWING DURATION OF TREATMENT OF THOSE WHO DIED.

Duration.	Within the year.			From the beginning.		
	Males.	Females.	Total.	Males.	Females.	Total.
Less than 1 month.....	3	1	4	90	65	155
Between 1 and 3 months...	1	.....	1	54	49	103
“ 3 6 “ ...	1	2	3	69	38	107
“ 6 9 “ ...	3	.....	3	6	.....	6
“ 9 12 “ ...	.....	1	1	48	31	79
“ 12 18 “ ...	2	.....	2	41	21	62
“ 18 24 “ ...	1	.....	1	23	8	31
“ 24 30 “ ...	1	1	2	2	1	3
“ 30 36 “ ...	2	.....	2	23	24	47
“ 3 4 years.....	1	.....	1	18	6	24
“ 4 5 “ .....	.....	2	2	2	3	5
“ 5 6 “	1	.....	1	12	13	25
“ 6 7 “ .....	.....	2	2	1	2	3
Over 7 years.....	2	4	6	19	20	39
Totals.....	18	13	31	408	281	689

TABLE XX.—SHOWING CAUSE OF DEATH.

Causes.	Within the year.			From the beginning.		
	Males.	Females.	Total.	Males.	Females.	Total.
Angina pectoris.....					1	1
Apoplexy	2		2	50	20	70
Bright's disease.....				1	1	2
Cutting throat before adm'n				1		1
Congestion of brain.....					2	2
" lungs..	1		1	5		5
Cause not given.....				14	29	43
Diarrhœa.....				7	5	12
Dysentery, acute.....				2		2
" chronic					7	7
Erysipelas.....				7	3	10
Epilepsy				8	8	16
Exhaustion, acute maniacal	2	1	3	67	49	116
" chronic "	2		2	20	23	43
" acute melanc'a		1	1	5	5	10
Fever					1	1
" typhoid				10	6	16
Gastritis.....					1	1
Gangrene of lung.....					1	1
Heart disease.....				11	10	21
Leucocythæmia				1		1
Marasmus senilis.....				9	5	14
Meningitis				1	1	2
Organic lesion of brain.....	1		1	21	6	27
" " stomach..				2	1	3
Peritonitis.....				4	2	6
Pneumonia.....	2		2	5	8	13
" typhoid				3		3
Pericarditis.....				1		1
Phrenitis.....				2	1	3
Paresis	6		6	78	8	86
Paralysis		1	1	1	13	14
Progressive m'scul'r atrop'y				1		1
Pupura hæmorrhagica.....					1	1
Phthisis pulmonalis.....				27	26	53
Suicide.....				6	10	16
Softening of the brain.....				13	2	15
Bronchitis.....				1		1
Cancer of liver.....				1		1
" stomach					2	2
Cystitis.....				1		1
Diphtheria.....				1		1
Emphysema				1		1
Enteritis	1	1	2	3	2	5
Exhaustion.....		1	1	8	4	12
Heart-clot				2		2
Inanition.....				1	3	4
Marasmus		1	1		2	2
Pyemia				1	3	4
Rheumatism					1	1
Senility				2		2
Strangulated-hernia.....					1	1
Pleurisy				1		1
Consumption of bowel.....				1		1
Suffocation		7	7		7	7
Diabetes	1		1	1		1
Totals.....	18	13	31	408	281	689

STEWARD'S REPORT.

CLEVELAND ASYLUM FOR THE INSANE,
NEWBURGH, O., *November 15, 1887.*

JAMIN STRONG, M. D., *Superintendent :*

I herewith present to you the thirty-third annual report of the financial department of this Institution for the fiscal year ending November 15, 1887.

C. W. DIEHL, *Steward.*

STATEMENT

Showing balances in the State Treasury November 15, 1886, appropriations made during the fiscal year 1887, amounts subject to draft during the fiscal year 1887, and the first quarter of the fiscal year 1888, amounts drawn from the State Treasury during the fiscal year 1887, and balances subject to draft November 15, 1887

Name of appropriation.	Balances in State Treasury November 15, 1886.	Appropriations made during the fiscal year 1887.	Amounts subject to draft dur- ing the fiscal year 1887, and and first quarter of 1888.	Amounts drawn from the State Treasury during the fiscal year 1887.	Balances in the State Treasury November 15, 1887.
Boilers at pump-house..	\$197 14	.....	\$197 14	.....	\$197 14
Books and pictures.....	50 52	\$184 43	234 95	\$159 69	75 26
Carpets .....	.....	1,212 73	1,212 73	1,212 73	.....
Current expenses.....	39,190 67	97,000 00	136,190 67	97,501 99	38,688 68
Fences .....	.....	500 00	500 00	500 00	.....
Horses .....	.....	400 00	400 00	160 00	240 00
New furniture and re- pairing old .....	.....	800 00	800 00	775 61	24 39
Ordinary repairs.....	776 29	5,500 00	6,276 29	5,926 71	349 58
Outlet to sewer.....	2,246 00	.....	2,246 00	150 00	.....
Painting .....	.....	1,000 00	1,000 00	949 15	50 85
Rebuilding drying-room .....	.....	1,000 00	1,000 00	1,000 00	.....
Reconstructing 2 wards. ....	.....	1,500 00	1,500 00	1,500 00	.....
Salaries of officers.....	1,666 88	5,000 00	6,666 88	5,066 72	1,600 16
Trustees' expenses.....	159 50	300 00	459 50	250 00	209 50

STATEMENT

Showing balances in hands of Financial Officer November 15, 1886, amounts received from State Treasury and from outside sources, amounts disbursed during the fiscal year 1887, and balances in hands of Financial Officer November 15, 1887.

Name of appropriation.	Balance in hands of financial officer November 15, 1886.	Amounts received from the State Treasury during the fiscal year 1887.	Amounts received from outside sources during the fiscal year 1887.	Total receipts for the year.	Amounts disbursed during the fiscal year 1887.	Balance in hands of financial officer November 15, 1887.
Boil's at pump-ho'se
Books and pictures..	\$159 69	.....	\$159 69	\$159 69	.....
Carpets	1,212 73	.....	1,212 73	1,212 73	.....
Current expenses... ..	\$665 70	97,501 99	\$4,190 64	102,358 33	100,936 40	\$1,421 93
Fences	500 00	.....	500 00	500 00	.....
Horses	160 00	.....	160 00	160 00	.....
New furniture and repairing old	775 61	.....	775 61	775 61	.....
Ordinary repairs.....	5,926 71	.....	5,926 71	5,926 71	.....
Outlet to sewer	150 00	.....	150 00	150 00	.....
Painting	949 15	.....	949 15	949 15	.....
Rebuilding drying-room	1,000 00	.....	1,000 00	1,000 00	.....
Reconst'ing 2 wards	1,500 00	.....	1,500 00	1,500 00	.....
Salaries of officers..	5,066 72	.....	5,066 72	5,066 72	.....
Trustees' expenses..	250 00	.....	250 00	250 00	.....

CURRENT EXPENSE SUMMARY.

Advertisements	\$99 85
Amusements	588 27
Articles for Christmas.....	233 26
Beans	96 71
Blacksmithing.....	196 46
Boots, shoes and slippers.....	407 39
Breadstuffs.....	4,140 07
Brooms ..	114 55
Brushes.....	51 63
Butter	6,425 03
Canned goods.....	58 16
Cheese.....	261 47
Clothing	1,628 20
Crockery	217 67
Disinfectant	95 45
Drugs, medicine and stimulants.....	1,226 04
Medical Instruments.....	45 44
Dry goods and notions.....	3,855 01
Eggs	1,836 37
Employes' wages.....	32,290 22
Extracts and material.....	15 50
Fees	4 80
Fertilizers.....	232 82
Fish	1,435 23
Forage	2,015 73
Freight	69 27
Fruit	2,311 78
Fuel	9,118 43
Furniture.....	24 00
Gas fixtures.....	66 95
Glassware.....	60 06
Groceries	6,295 93
Hardware, tin and stoveware.....	986 73
Harness....	183 09
House furnishing goods.....	92 24
Ice	291 80
Labor.....	344 62
Lime	131 95
Meats.....	12,549 14
Milk	4,315 82
Miscellaneous	655 74
Oils.....	123 91
Oysters	204 27
Papers and periodicals.....	51 50
Patients' expenses.....	41 85
Plants, seeds and trees.....	146 60
Postage	197 25
Poultry	283 08
Rubber goods.....	247 33
Scales and testing	10 70
Soap and materials.....	941 16
Stationery.....	281 13
Stock and material for green-house.....	121 26
Stock	19 25

CLEVELAND ASYLUM FOR THE INSANE.

945

Straw	534 89
Telegrams	61 61
Telegraph supplies.....	11 34
Telephone	236 75
Traveling expenses	61 25
Vegetables	2,182 89
Vinegar.....	15 12
Wooden and willow-ware.....	33 13
Lunches in city.....	36 15
Horse feed and shelter.....	25 10
<hr/>	
Total.....	\$100,936 40

DISBURSEMENTS FROM APPROPRIATION FOR CURRENT EXPENSES.

Articles.	Quantity.	Average.	Amount.	Total.
Advertisements—				
Proposals for meat and coal			\$68 18	
“ milk			31 67	\$99 85
Amusements—				
Music for dances.....	49 nights	\$9 99	\$489 50	
Operatic entertainment	1.....		6 00	
Fascial entertainment.....	1.....		15 00	
Concert	1.....		10 00	
Car fare for singers			1 00	
German Band	11½ hours		26 50	
Fire-crackers	4 dozen	12½	50	
Fire-works for July 4th			39 77	588 27
Articles for Christmas—				
Bouquet green.....	700 pounds ...	3¼	\$22 75	
Tissue paper.....	2 qrs	25	50	
Candy boxes.....	800.....	1 25	10 00	
Candy	300 pounds ...	12	35 63	
Nuts	402 “	12	48 92	
Holly	3 “	25	75	
Christmas trees.....	2.....	5 00	10 00	
Arbor vitæ.....	1 box		1 00	
Silk handkerchiefs.....	5½ dozen	9 00	49 50	
Vases	5½ “	7 82	39 75	
Fairy lamps	2.....	1 50	3 00	
Sugar bowls and creamers.....	2.....	1 00	2 00	
Salts	2.....	50	1 00	
Figures	½ dozen	5 00	2 50	
Ribbon.....	20 yards.....	28	5 09	
Ear-rings	1 pair		50	
Breast-pin.....	1.....		37	233 26
Beans—				
Common	55½ bushels...	1 73	\$96 06	
Lima.....	1 peck.....		65	96 71
Blacksmithing—				
Horse-shoeing			\$169 25	
Repairing			27 21	196 46
Boots, shoes and slippers—				
Repairs			\$152 19	
Shoes, men's	115 pairs	1 43⅔	165 20	
Slippers, men's	100 “	90	90 00	407 39
Bread-stuffs—				
Crackers, farina.. ..	151 pounds ...	05	\$7 55	
“ lemon.....	19¾ “	10	2 00	
“ soda	4,512 “	05½	243 00	
“ snow-drift.. ..	85½ “	10	8 56	
Ginger-snaps	12½ “	09	1 12	
Maryland biscuits.....	108 dozen.....	08	8 64	
Flour, buckwheat	250 pounds ...	02½	6 08	
“ Graham	75 barrels ...	3 76⅔	282 45	
“ wheat.....	814 “	3 90½	3,179 40	
Meal, corn.....	6,680 pounds..	1 10	73 48	
“ oat.....	50 barrels	5 85	292 50	
Yeast	93 pounds	30	27 90	
White corn-meal	100 “		1 62	

DISBURSEMENTS FROM APPROPRIATION FOR CURRENT EXPENSES—Continued.

Articles.	Quantity.	Average.	Amount.	Total.
Bread-stuffs—Continued.				
Lady fingers.....	6 dozen	\$ 12	\$ 72	
Corn farina..	2 boxes.....	2 12 $\frac{1}{2}$	4 25	
Granula	6 packages.....	12 $\frac{1}{2}$	75	
Barley	1 pound		05	
				\$4,140 07
Brooms—				
Stable	3 dozen.....	3 85	\$11 55	
Sweeping.....	47 “	2 00	94 00	
Whisk	6 “	1 50	9 00	
				114 55
Brushes —				
Dust	1 dozen.....		\$9 00	
Hair	1 “		6 75	
Horse	$\frac{1}{2}$ “		12 00	
Scrub	1 $\frac{1}{4}$ gross		23 88	
				51 63
Butter.....	23,950 pounds	26 $\frac{4}{5}$	\$6,425 03	6,425 03
Canned goods—				
Corn	18 $\frac{1}{3}$ doz.....	1 24	22 76	
Mackerel	54 pounds	08 $\frac{1}{3}$	4 50	
Lobster	4 dozen	2 60	10 40	
Pumpkin	2 “	1 00	2 00	
Sardines	100 pounds ...	18 $\frac{1}{2}$	18 50	
				58 16
Cheese	2,458 $\frac{1}{2}$ pounds	10 $\frac{3}{4}$	\$261 47	261 47
Clothing—				
Alpaca coat.....	1		\$1 30	
Coats and vests	5.....	3 61	18 05	
Collars, linen, men's	30 dozen.....	1 25	37 50	
Hats, straw	3 “	2 50	7 50	
“ wool	1 $\frac{1}{6}$ “	8 14	9 50	
Hose, men's	44 “	1 25	55 00	
Overcoats	6.....	3 70	22 20	
Overalls	6 $\frac{1}{2}$ dozen.....	7 56	49 15	
Pants	4 “	13 78	55 12	
Suits	220.....	4 88 $\frac{3}{4}$	1,075 38	
Suspenders	4 dozen	2 06	8 25	
Vests, ladies'	16 “	5 14	82 25	
Undershirts and drawers	46 “	4 50	207 00	
				1,628 20
Crockery—				
Bakers	6 dozen.....	\$3 20	\$19 20	
Bowls	7 “	1 70 $\frac{1}{2}$	11 95	
Cups, feeding.....	$\frac{1}{2}$ “	3 50	1 75	
“ tea.....	65 “	48	31 30	
Cups and saucers.....	5 “	1 39	6 95	
Saucers	18 “	46 $\frac{2}{3}$	8 40	
Foot warmers.....	$\frac{1}{4}$ “	7 50	1 88	
Pitchers, cream.....	2 $\frac{3}{4}$ “	1 78	4 90	
“ water..	9 “	5 72	51 50	
Plates, bread.....	$\frac{1}{3}$ “	8 00	2 67	
“ butter, individual.....	10 “	36	3 60	
“ dinner	31 $\frac{1}{2}$ “	1 04 $\frac{2}{3}$	35 05	
“ pie.....	3 “	85	2 55	
“ soup	6 “	1 05	6 30	
Sauce dishes.....	5 “	61	3 05	
Sugar bowls.....	1 $\frac{1}{6}$ “	4 20	4 90	
Bed pans.....	$\frac{1}{2}$ “	10 00	5 00	
Yellow bowls.....	4 “	18	72	

DISBURSEMENTS FROM APPROPRIATION FOR CURRENT EXPENSES—Continued.

Articles.	Quantity.	Average.	Amount.	Total.
Crockery—Continued.				
Soap-holders	1 dozen .....	.....	\$1 00	
Match safes.....	1 " .....	.....	1 50	
Slop jars.....	1 " .....	.....	13 50	
				\$217 67
Disinfectant—				
Carbonate of lime.....	2,377 pounds..	\$ 02½	\$59 42	
Ammonia	846 " ..	04¼	36 03	
				95 45
Drugs, Medicines and Stimulants—				
Alcohol	93½ gallons...	2 08	\$194 91	
Brandy.....	9 pints.....	1 75	15 70	
Medicines.....	.....	.....	982 80	
Whisky	9 gallons	3 62½	32 63	
				1,226 04
Medical Instruments—				
Catheters	8.....	37½	\$3 00	
Syringes	26.....	79¾	20 69	
" hypodermic	2.....	3 50	7 00	
Stomach tubes.....	2.....	2 37½	4 75	
Thermometers (Hicks).....	2.....	2 50	5 00	
Hypodermic needles.....	1 dozen.....	.....	5 00	
				45 44
Dry Goods and Notions—				
Blankets, indestructible.....	635 pounds...	78	\$495 30	
Calico	1,045½ yards..	08	84 04	
Cambric.....	188 " ..	06	11 84	
Cheviot	69 " ..	08¾	6 08	
Checks.....	216½ " ..	11	24 28	
Cotton, bleached....	722 " ..	15	110 16	
" unbleached.....	5,562¾ " ..	09¼	515 91	
" batting	1,050 pounds..	12½	129 94	
" knitting.....	14 " ..	48¾	6 92	
Crash	549¾ yards..	10½	62 63	
Flannel	279¾ " ..	22¾	63 64	
" Canton.....	6 " ..	06	36	
Gingham.....	699¼ " ..	09	64 51	
Handkerchiefs.....	15½ dozen	1 40	21 70	
Hose, women's.....	29 "	4 07	118 00	
Linen, bleached	151¾ yards....	84	127 41	
" unbleached.....	741½ "	55	407 83	
Mull, Persian.....	23¾ "	26½	6 31	
Muslin for sash curtains.....	25 "	20	5 00	
Napkins.....	16 dozen	1 90½	30 50	
Musquito net.....	9 pieces.....	40	3 60	
Skirting	204¾ yards....	10	20 73	
Sheeting ..	329 "	14½	47 70	
Ticking.....	6,107 "	11	674 79	
Towels.....	9 dozen.....	2 64	23 75	
Toweling, twilled.....	2,850 yards....	12½	356 25	
" cotton	50 "	04½	2 25	
Hoods ..	½ dozen	8 50	4 25	
Checker men.....	1 " .....	.....	75	
School crayons	1 box.....	.....	13	
Baize	½ yard.....	.....	85	
Shade line.....	11 gross.....	57	6 23	
Duck cloth.....	112 yards....	60	67 20	
Ruching.....	4 "	25	1 00	
Stay binding.....	12 dozen.....	22	2 64	
Buttons, agate.....	29 gt. gross...	97	28 20	

DISBURSEMENTS FROM APPROPRIATION FOR CURRENT EXPENSES—Continued.

Articles.	Quantity.	Average.	Amount.	Total.
Dry Goods and Notions—Contin'd.				
Buttons, coat.....	1 gross .....	.....	\$ 45	
“ suspenders	3 gt. gross.....	\$ 75	2 25	
“ dress.....	15 gross.....	75	11 25	
“ pearl	6 “	85	5 10	
Cards	10 dozen.....	1 52	15 25	
Checker boards.....	$\frac{1}{6}$ “	6 75	1 13	
Picture cord.....	4 boxes.....	25	1 00	
Combs, dressing	29 dozen.....	1 09 $\frac{1}{2}$	31 80	
Collars, ladies.....	8 “	1 62 $\frac{1}{2}$	13 00	
Collar buttons.....	2 gross.....	75	1 50	
Cuffs.....	3 dozen.....	1 62 $\frac{1}{2}$	4 88	
Indelible ink.....	2 “	10 50	21 00	
“	$\frac{1}{2}$ gross.....	22 50	11 25	
Mittens, men's.....	3 dozen.....	6 00	18 00	
Needles, common.....	8 M.....	1 50	12 00	
“ darning	5 papers.....	10	50	
“ machine	3 dozen	35	1 05	
Pins ..	54 pkgs.....	35 $\frac{5}{6}$	19 35	
“ safety	12 gross..	80	9 60	
Razor straps	1 dozen .....	.....	4 50	
Scarfs and ties	12 $\frac{1}{2}$ “	2 46	30 79	
Spectacles	6 “	1 50	9 00	
“ cases.....	2 “	75	1 50	
Tape linen.....	48 “	15 $\frac{3}{4}$	7 58	
Thread, cotton.....	120 “	55	66 00	
“ linen..	4 pounds.....	85	3 40	
“ “	24 dozen.....	80	19 20	
Eggs	10,056 dozen..	18 $\frac{1}{6}$	\$1,836 37	\$3,855 01 1,836 37

EMPLOYES' PAY-ROLL.

Name.	Occupation.	Time.		Amount.
		Months.	Days.	
Foster K. Reed	Engineer	12	.....	\$900 00
Thomas H. Duff	Asst. Engineer	12	.....	420 00
Gotlieb Karber	Baker	12	.....	720 00
William Priggie	Asst. Baker	12	.....	311 66
August Beutel	"	12	.....	249 34
Jamin Strong	Sec. Board Trustees	5	.....	250 00
Edward Pellaw	Carpenter	12	.....	750 00
Robert J. Parkin	Druggist	9	18	344 16
A. T. Heath	"	2	5	72 50
Clayton J. Standart .....	" .....	.....	12	12 00
Wm. H. Strong	Clerk	7	24	351 00
Fred. C. Seelbach .....	" .....	.....	8	8 00
C. W. Barden	"	4	13	156 16
Sam'l J. Richardson	Gas-maker	12	.....	336 41
William Roberts	Fireman	11	5	321 98
Jacob Schroder	"	11	5	315 58
Fred. Doering	"	7	.....	214 42
Nicholas Duff	"	1	20	42 50
Cornelius Riekard .....	" .....	.....	20	16 66
Arthur Brown .....	" .....	.....	15	12 50
Burt Lytle	Stoker	5	15	82 50
Albert Vorheese	"	4	23	71 50
Joseph M. Farr	Butcher	12	.....	381 00
Jacob Kollmann	Dairyman	12	.....	374 00
William Leitch	Gardener	12	.....	480 00
Arthur Brown	Asst. Gardener	6	.....	147 50
John McPhail	Hostler	12	.....	360 00
Arthur Baldwin	Asst. Hostler	7	14	153 99
Geo. B. Pearson	"	4	15	112 50
Charles Lawrence	Teamster	12	.....	305 83
Burt Lytle	Cartman	6	16	103 00
William Riekard	"	1	16	23 00
William Cundall	Porter	12	.....	300 00
Morris Williams	Laborer	12	.....	300 00
Thomas Richardson	"	2	16	119 00
"	Cleaning sewers	3	.....	9 00
Morris Williams	"	1	.....	3 00
Nicholas Duff	Laborer	1	14	36 67
William Hitchcock	"	7	.....	274 50
Marvin Brady	"	12	.....	60 00
Milo A. Corbitt .....	" .....	.....	23	34 50
William Salsbury .....	" .....	.....	31½	42 52
C. W. Diehl	Supt. gas-works and fire protection service	12	.....	400 00
Homer S. Stark	Asst. Storekeeper	12	.....	367 00
Austin Kearns	Food distributor	10	.....	255 83
Alfred Taylor	"	2	7	61 66
Edward Cull	Painter	12	.....	360 00
William Liggett	Outdoor attendant	5	.....	130 83
Fred. Doering	"	5	.....	146 53
H. M. McWilliams	"	5	14	139 00
L. C. Wilson	Housekeeper	5	.....	136 66
Olive Cox	"	7	.....	175 00
Mercy Cope	Distributor	12	.....	192 00
Maggie Cooke	Asst. distributor	12	.....	168 00
Kate Hunt	Seamstress	12	.....	216 00
Mary Rice	Mending-room	12	.....	180 00

EMPLOYEES' PAY-ROLL—Continued.

Name.	Occupation.	Time.		Amount.
		Mouths.	Days.	
Lizzie Collins	Officers' cook	12	.....	\$204 00
Mary Colfer	Ass't officers' cook	12	.....	113 00
Anna Hargton	Kitchen	12	.....	171 27
Jane Bartley	"	12	.....	144 00
Aggie Giddens	"	1	.....	12 00
Mary A. Lambert .....	" .....	.....	9	3 00
Nora King	"	8	.....	87 64
Bridget Ottley	"	10	.....	102 00
Annie Moran	"	12	.....	124 00
Mary Troohig	"	10	21	128 40
Nellie Connors	"	3	.....	30 32
Ellen Walsh	"	1	29	19 67
Mary Marshall	Kitchen attendant	12	.....	144 00
Mary Sloan	Extra girl	12	.....	146 00
Mary Mahony	Hall girl	6	2	60 67
Kate Lomery	"	6	.....	62 00
Ellen Sullivan	Head laundress	4	.....	80 66
Maggie McLaughlin	"	12	.....	209 60
Ellen O'Neill	Laundress	12	.....	179 50
Mary Patton	"	11	.....	165 00
Mary Molloy	"	11	23	164 74
Mary Whitty	"	11	24	153 40
Mary Tadgen	"	12	.....	147 00
Jennie Sullivan	"	10	.....	111 32
Kate Lowery	"	6	.....	60 00
Kate Handren	"	12	.....	119 00
Maggie Molloy	"	9	21	97 00
Julia McCarthy	"	12	.....	120 00
Johanna Keefee	"	8	21	86 99
Kate Gallagher	"	12	.....	122 00
Aggie Handren	"	12	.....	120 00
Mary Connors	"	12	.....	120 00
Mary Loury	"	12	.....	120 00
Annie O'Donnell	"	12	.....	118 00
Kate Coleman	"	12	.....	120 00
Delia Garvin	"	5	27	58 67
Sadie English	"	6	.....	59 99
Lizzie Pendry	"	2	9	23 00
Mary Sullivan	"	2	5	21 67
Mary Kelley .....	" .....	.....	27	9 00
Geo. D. Watt	Laundryman	12	16	250 64
Frances Bennett	Sewing carpet .....	.....	16	10 00
Anna Elderson	House-cleaning .....	.....	10	4 00
Johanna Keefe .....	" .....	.....	28	10 86
Mary A. Lambert .....	" .....	.....	13	17 20
Eugene E. Diehl	Laborer .....	.....	2½	2 00
Alida B. Diehl	Work on annual report .....	.....	25	25 00
"	Asst. Storekeeper .....	.....	6	6 00
Ellen Fitzgerald	Chambermaid	12	.....	148 80
Henrietta Meyers	"	1	8	15 20
Nellie McGloine	"	9	26	113 40
Aggie Giddens	"	11	.....	134 00
Jennie Sullivan	"	2	.....	24 00
Nora Flannigan	Dining-room	12	.....	144 00
Maggie Cash	"	12	.....	144 00
Kate Giddens	"	7	11	88 40
Sarah Hanley	"	3	11	20 20

EMPLOYEES' PAY-ROLL—Continued.

Name.	Occupation.	Time.		Amount.
		Months.	Days.	
Jennie Smith	Dining-room	5	.....	\$55 00
Mary Tiffany	Supervisor	12	.....	240 00
Hattie P. Hendrickson	"	12	.....	240 00
Oline Cox	"	5	.....	100 00
Della J. Elliott	Night-watch	12	.....	240 00
E. S. Lindsay	"	6	12	132 66
Myrtle Kelley	"	2	18	52 00
Minnie Clarke	"	2	15	50 00
Nora Sloan	Night attendant	1	23	31 80
Maggie Hall	Attendant	12	.....	216 00
Kate Kelley	"	3	.....	48 00
Myrtle Kelley	"	5	.....	82 59
Ella M. Cox	"	5	16	92 73
Jennie Campbell	"	11	26	193 58
Eliza Young	"	12	.....	192 00
Mary Stafford	"	5	4	81 97
Ann B. Smith	"	2	11	37 86
Statie Hall	"	2	14	39 46
Lizzie Boggs	"	8	12	167 39
Louisa Teeple ..	"	12	.....	240 00
Ella Loomis .....	" .....	.....	13	8 66
Verna Leach	"	10	3	181 60
Ada Curtiss	"	6	28	138 66
Alice Boyer	"	6	16	130 66
Emma Hoyt	"	12	.....	216 00
Charlotte Brunner	"	4	.....	72 00
Eliza Rogers	"	12	.....	216 00
Lydia Foust	"	8	.....	144 00
Maud Wilson	"	4	20	84 00
Etta Spear	"	7	5	137 40
Endora Buck	"	11	29	219 60
Minnie Clarke	"	9	15	168 66
Euphemia Webb	"	5	24	104 40
Mary Taylor	"	12	.....	244 66
Anna M. Barlow	"	6	26	141 99
Lida Fitzpatrick	"	9	12	192 66
Polly Swift	"	1	4	22 00
Olie Serfass .....	" .....	.....	12	7 33
Lucy Shaw	"	3	27	78 00
Cornelia Tew	"	2	13	48 66
Sophona Webb	"	12	.....	216 00
Mary E. Morrall	"	7	24	140 40
Blanche Waite	"	9	26	177 60
Agnes Boggs	"	1	12	25 20
Cena Solinger	"	1	14	24 40
Lucy Toomey	"	10	23	188 74
Anna Young	"	12	.....	216 00
Mira Fuller	"	12	.....	216 00
Maggie Stroupe	"	8	7	152 40
E. M. Rowles	Supervisor	12	.....	515 00
Richard Rees	"	12	.....	417 00
Wm. H. Smith	Night-watch	4	8	135 00
Frank Powers	Night attendant	1	15	37 50
Hugh Moore	Attendant	12	.....	311 66
Wm. H. Smith	"	7	22	199 16
Samuel Rogers	"	4	.....	100 00
Fred. W. Taylor	"	6	19	165 83

EMPLOYEES' PAY-ROLL—Continued.

Name.	Occupation.	Time.		Amount.
		Months.	Days.	
Creigh Corwin	Attendant	6	11	\$165 00
Seth W. May	"	5	10	133 33
Fred. Poole	"	12	27	328 33
Frank Leake	"	5	5	103 33
John S. Richards .....	" .....	.....	14	11 66
Alfred Taylor	"	9	23	250 00
A. H. Brewster	"	12	.....	300 00
John Mitchell	"	2	7	55 82
Edward Pardee	"	12	.....	300 00
Arthur Shattuck	"	11	15	293 33
Moses Lyman	"	6	11	159 16
Thomas Ruddock	"	1	29	49 16
William D. Clarke	"	5	26	152 50
James J. Carey	"	1	10	33 33
A. W. Swift	"	9	16	243 33
Daniel Igo	"	2	2	51 66
James M. Pierson	"	2	21	67 50
James Wilson ..	"	1	1	25 82
Maurice Gibbons	"	5	21	142 50
Jacob Simpson	"	4	26	121 66
James Reddy	"	12	.....	318 83
Reuben Berger	"	8	.....	200 00
W. J. Miller	"	11	5	284 99
J. W. Newmann .....	" .....	.....	21	17 50
Johan Cavin .....	" .....	.....	9	7 50
Christian Newmann	"	4	16	114 15
William Reese	"	1	27	47 50
John Reese .....	" .....	.....	7	5 83
Hugh McWilliams	"	7	.....	180 83
George M. Knight	"	3	2	76 66
William Horner	"	2	1	50 83
Namon Foust .....	" .....	.....	12	10 00
Edward Merrifield	"	3	9	81 67
Joseph Riddley	"	2	.....	50 00
James Bingham	"	6	18	164 99
William Liggett	"	7	.....	175 00
Patrick Carrigan	"	12	.....	300 00
Earnest Woodward	"	1	6	30 00
Samuel Rnddock	"	4	11	109 16
John M. Corbitt	"	12	.....	305 83
Frank Snell	"	7	2	176 66
William Clegg	"	3	27	97 50
James Gill	"	5	.....	125 00
James B. Tuttle	Night-watch	7	29	239 00
Total .....	.....	.....	.....	\$32,290 22

DISBURSEMENTS FROM APPROPRIATION FOR CURRENT EXPENSES—Continued.

Articles.	Quantity.	Average.	Amount.	Total.
Extracts and Materials—				
Vanilla beans..	$\frac{1}{2}$ pound.....	\$14 00	\$7 00	
Tanka "	$\frac{1}{2}$ "	2 00	1 00	
Oil lemon.....	1 " .....	.....	2 50	
Extract vanilla.....	5 pints.....	1 00	5 00	
				\$15 50
Fees .. .....	.....	.....	\$4 80	4 80
Fertilizers—				
Bone dust.....	4,600 pounds..	$01\frac{3}{4}$	78 37	
Manure	95 loads.....	1 20	113 60	
Refuse salt.....	123 pounds...	33	40 85	
				232 82
Fish—				
Bass	80 $\frac{1}{2}$ pounds...	12	\$9 56	
Codfish, fresh.....	2,271 " ...	$09\frac{1}{2}$	223 27	
" salt.....	3,093 " ...	$05\frac{2}{3}$	181 24	
Haddock, fresh.....	456 " ...	08	36 48	
Mackerel.....	3 kitts.....	$2\ 68\frac{1}{3}$	8 05	
Muskellonge, fresh	48 $\frac{1}{2}$ pounds...	13	6 20	
Pickrel, fresh.....	382 " ...	$10\frac{1}{2}$	40 11	
Pike, fresh.....	352 " ...	08	27 76	
Trout, fresh.....	3,052 " ...	$09\frac{2}{3}$	299 56	
" salt.....	2,900 " ...	05	139 25	
White fish, fresh.....	2,712 $\frac{1}{2}$ " ...	10	271 25	
" salt... ..	2,900 " ...	$06\frac{3}{5}$	192 50	
				1,435 23
Forage—				
Corn	122 $\frac{1}{2}$ bushels..	35	\$55 05	
Chopped feed.....	100 pounds...	.....	1 10	
Hay	67 $\frac{3}{5}$ tons..	15 47	1,046 16	
Meal, corn.....	6 "	$18\ 37\frac{1}{2}$	110 24	
Middlings	17 "	15 50	263 51	
Oats.....	1,780 $\frac{3}{4}$ bus....	$30\frac{1}{2}$	539 67	
				2,015 73
Freight .. .....	.....	.....	\$69 27	69 27
Fruit—				
Apples, dried....	3,699 pounds..	05	\$183 25	
" green	495 $\frac{1}{2}$ bushels..	69	342 30	
Bananas.....	16 bunches...	1 87	29 98	
"	21 dozen.....	32	6 70	
Blackberries	64 quarts.....	$09\frac{3}{8}$	6 00	
Currants	10 bushels....	$1\ 88\frac{7}{10}$	19 75	
Cider	2,292 gallons..	07	159 93	
Citron.....	9.....	08	75	
Cocoanut.....	30 pounds....	20	6 00	
Cranberries.....	2 barrels	7 25	14 50	
"	4 quarts..	09	35	
Elderberries	291 "	06	17 44	
Figs.....	33 $\frac{1}{2}$ "	19	6 40	
Cider jelly.....	60 gallons	50	30 00	
Grapes, Concord.....	18,738 pounds	03	545 62	
" Catawba	1,757 "	$05\frac{1}{2}$	95 31	
Huckleberries	323 quarts....	16	51 33	
Lemons	7 boxes.....	5 50	38 50	
"	60 dozen	$25\frac{2}{3}$	15 20	
Melons, nutmeg.....	843.....	$06\frac{1}{2}$	54 98	
" water.....	494.....	$16\frac{3}{4}$	82 44	
Oranges	32 boxes.....	3 05	97 60	

DISBURSEMENTS FROM APPROPRIATION FOR CURRENT EXPENSES—Continued.

Articles.	Quantity.	Average.	Amount.	Total.
Fruit—Continued.				
Oranges	68½ dozen	\$36	\$24 54	
Peaches, dried.....	531 pounds...	05½	29 13	
“ green	38 bushels....	2 00	76 00	
Pears	6½ “	1 15	7 50	
“	3 dozen	30	90	
Pine apple.....	77.....	14	10 60	
Plums	1½ bushels....	2 00	3 00	
Prunes.....	5,002 pounds..	05½	259 25	
Quinces	4½ bushels....	1 44½	6 50	
Raspberries	271 quarts....	07½	20 58	
Strawberries	49⅔ bushels...	1 40	69 45	
				\$2,311 78
Fuel—				
Coal, bituminous.....	5,182 tons.....	1 54⅓	\$7,997 82	
“ gas	493½ tons....	2 27½	1,120 61	
				9,118 43
Furniture—				
Clocks	6.....	2 66⅔	\$16 00	
“ repairing	8.....	1 00	8 00	
				24 00
Gas Fixtures—				
Burners, incandescent.....	1 only.....		\$1 50	
Globes	16 dozen.....	3 19	51 00	
Pillars.....	1 gross		1 40	
Tips ..	2¼ “	1 29	3 55	
Brass nipples.....	3 dozen.....	90	2 70	
Wax tapers..	17 pounds....	40	6 80	
				66 95
Glassware—				
Castors, wire.....	1 dozen.....	15 00	\$15 00	
Cruets	2⅓ “	1 85⅕	4 30	
Fruit dishes.....	4 “	41	1 65	
Jelly glasses.....	1 gross		3 96	
Spoon holders.....	5½ dozen.....	1 26	6 50	
Vinegar bottles.....	1 only.....		1 50	
Tumblers.....	38½ dozen	70½	27 15	
				60 06
Groceries—				
Baking powder..	263 pounds...	22⅓	\$58 75	
Bath brick.....	5 boxes.....	85	4 25	
Blacking	3 dozen.....	45	1 35	
Candles	57 pounds....	09	5 15	
Cinnamon, ground.....	67 “	12	8 14	
Cigars.....	150.....	07	10 63	
Chocolate	12 pounds....	36	4 32	
Cloves	10 “	28	2 80	
Coffee, roasted, Java	410 pounds...	33⅔	137 00	
“ “ Rio	5,028 “ ...	21⅔	1,089 20	
Currants	288 “ ...	06	18 00	
Ginger	97 “ ...	12	11 64	
“ pressed.	12 jars	70⅕	8 50	
Hulled corn.....	420 quarts....	05	21 00	
Indigo	55 pounds	70⅕	38 75	
Matches.....	1 case		2 55	
Molasses, New Orleans.....	403 gallons....	48	193 31	
Mop sticks	1 gross		12 00	
Mustard	52 pounds	25	13 00	
“ French	2 dozen jars...	1 72½	3 45	
Pickles.....	2 barrels.....	7 25	14 50	

DISBURSEMENTS FROM APPROPRIATION FOR CURRENT EXPENSES—Continued.

Articles.	Quantity.	Average.	Amount.	Total.
Groceries—Continued—				
Pepper	179 pounds ...	\$ 20	\$35 65	
Raisins	143 " ...	07	10 44	
Rice	5,314 " ...	05	273 15	
Sago	165 " ..	06	9 90	
Saleratus	60 " ...	06	3 60	
Salt, dairy	2 sacks	1 00	2 00	
" fine	41 barrels.....	87½	35 90	
"	2 sacks	2 10	4 20	
Starch, corn	640 pounds ...	06½	40 40	
" pearl	957 " ...	03½	33 43	
" Silver Glass.....	370 " ...	04	14 80	
Sugar, Windsor A.....	27,671 " ...	05½	1,523 11	
" granulated	2,198 " ...	06½	136 20	
" powdered	686 " ...	06½	45 03	
" maple.....	110 " ...	10	11 00	
" coffee C	6,775 " ...	05	336 32	
Syrup	1,027½ gallons.	32½	333 95	
" maple	66 " ...	76½	50 75	
Tapioca	197 pounds ...	06	11 82	
Tea, Japan	3,990 " ...	41	1,392 40	
Tobacco, chewing.....	1,016 " ...	28	284 04	
" smoking	150 " ...	24	36 00	
Cinnamon bark.....	1 mat		75	
Creamtarter	10 pounds	41	4 10	
Fly paper	6 boxes.....	1 10	6 60	
Candlewick	10 pounds.....	21	2 10	
				\$6,295 93
Hardware, tin and stoveware—				
Bells	1 dozen		\$3 05	
Bolts	1 "		36	
Butts	3 pairs		30	
Carpet tacks.....	2 doz. papers.		45	
"	50 pounds		6 00	
Coat and hat hooks	2½ gross		3 92	
Coal hods	1½ dozen		5 63	
Dustpans	5½ "		4 81	
Glass	1 light.....		1 50	
Iron for ice skids	98 feet.....	06	5 88	
Iron	86 pounds	04½	3 99	
Knives, butcher	1 12-inch		85	
" mincing	1½ dozen.....	1 50	2 25	
Lanterns	1 "		7 50	
Drawer locks	7.....	39	2 75	
Pad locks	8.....	72	5 75	
Rim "	1.....		1 10	
Measures.....	1, quart		25	
Iron pails for coke	2.....	1 50	3 00	
Rivets	4 pounds	16½	65	
Rope, manilla.....	15 "	14	2 10	
" hemp	30 "	18	5 40	
Sad irons.....	108 "	02½	3 78	
Sash cord	28½ "	28	7 98	
Saws, cross cut and handles	1		2 50	
" turning	1.....		12	
" buck	1.....		1 00	
Saw blades	3.....	60	1 80	
Screws	17 gross	11½	1 96	
Scythe stones.....	1.....		10	
Shears	1 dozen.....		5 00	

DISBURSEMENTS FROM APPROPRIATION FOR CURRENT EXPENSES—Continued.

Articles.	Quantity.	Average.	Amount.	Total.
Hardware, etc.—Continued—				
Shovels, common	2 dozen.....	\$8 89	\$17 78	
“ scoop	$\frac{1}{3}$ “	13 95	4 65	
Spades	$\frac{1}{2}$ “	6 40	3 20	
Staples	8 pounds	06	48	
Tape lines	1		45	
Thermometers	5 dozen.....	3 50	17 50	
Twine	61 pounds	18 $\frac{1}{3}$	11 15	
Washers	2		20	
Wire	43 pounds	04 $\frac{1}{3}$	1 89	
Miscellaneous hardware—				
Flue cleaner.....	1		5 85	
Brass rod	2 $\frac{1}{4}$ pounds	19	45	
Latches	1 dozen.....		2 40	
Ice plow teeth	1 set		16 50	
Mole trap	1		2 00	
Metal	15 $\frac{1}{4}$ pounds ..	25 $\frac{3}{7}$	3 88	
Chuck	1		15 00	
Cooler bars.....	2	50	1 00	
Strap hinges.....	1 pair.....		25	
Plow points	18	36 $\frac{2}{3}$	6 60	
Cultivator teeth	7	40	2 80	
Spatula	1		58	
Ice cream freezer	1		5 50	
Pick handles	1 dozen.....		1 50	
Sledge handles	1 “		1 50	
Brass coupling.....	2 sets.....	25	50	
Lawn rakes	1 dozen.....		2 50	
Malleable iron rakes	1 “		2 80	
Forks	$\frac{1}{2}$ “	4 50	2 25	
Buckeye cultivator.....	1 only.....		6 50	
Sponges	1 $\frac{3}{16}$ pounds ..	2 25	2 67	
Polar refrigerator.....	1		16 80	
Sprit level.....	1		85	
Hammering circular saw .....	.....		75	
Gas cooking stove.....	1		16 00	
Emery paper	2 quires		60	
Horse rake teeth.....	5		2 00	
Hose couplings	2 set		50	
Coffee boiler	1 only		4 50	
Iron stands.....	2 dozen		1 05	
Refrigerator	1 only.....		6 65	
Sectional ladders	16		26 17	
Screw eyes	1 gross		63	
Boiling stove	1		8 00	
Copper stays	1 dozen.....		75	
Glue pot	1		75	
Flour sifter	1		21	
Razor hone	1		2 25	
Bent oil spouts	$\frac{4}{6}$ dozen.....		64	
Axes	3		2 04	
Gauge plate for ice plow	1		5 75	
Steel hammer	1		1 08	
Ice hooks	1 dozen.....		10 00	
Ice hook handles	$\frac{1}{2}$ “	2 25	1 13	
Slush scraper	1		3 00	
Tubular wheelbarrow	1		15 00	
Steel ice tongs	6	1 66	10 00	
Coke rake	1		2 00	

DISBURSEMENTS FROM APPROPRIATION FOR CURRENT EXPENSES—Continued.

Articles.	Quantity.	Average.	Amount.	Total.
Miscellaneous hardware—Cont'd—				
Punch	1.....		\$1 25	
Crow-bars	2—39-pound..	\$1 17	2 34	
Hatchets	2.....	60	1 20	
Trowels	4.....	59	2 37	
Picks	$\frac{1}{2}$ dozen.....	6 50	3 25	
Potato scoops.....	$\frac{1}{2}$ "	14 00	7 00	
Coal tongs.....	2 pairs	35	70	
Monkey-wrenches	2.....	36 $\frac{1}{2}$	73	
Hoes	1 dozen.....		3 00	
Tobacco cutter.....	1.....		2 50	
Hand drill	1.....		2 50	
Casting for range	224 pounds ..	08	17 92	
Fire-brick for range.....	5	45	2 25	
Cans	3 quarts	12 $\frac{1}{2}$	38	
“ beef tea and gruel	72.....	25	18 00	
“ fruit	1 gross		55 00	
Cake turners.....	1 dozen.....		1 28	
Chambers	10 "	6 10	61 00	
Coffee pots	3.....	32	96	
Cullenders	1 dozen.....		1 56	
Cups	1 gross		3 00	
Dippers	$\frac{1}{2}$ dozen.....	1 50	75	
Kettles, preserving.....	2.....	1 60	3 20	
Meat pans.....	2.....	1 50	3 00	
Zinc oilers.....	1 dozen.....		60	
Pans, drip.....	8.....		4 00	
“ fruit.....	2.....		10 00	
“ dish.....	1 $\frac{1}{2}$ dozen.....		7 80	
“ frying	1.....		35	
“ stew	1.....		35	
“ pie.....	1 gross		12 00	
Pails	18.....		22 50	
“ chambers	1 dozen.....		6 00	
Scoops	$\frac{1}{4}$ "		63	
Soup boxes.....	36.....		72 00	
Sprinklers	11.....		7 15	
Stove polish	$\frac{1}{4}$ gross		1 44	
Toast boxes, covers.....	6.....		1 80	
Tea pots.....	3.....		85	
Coffee pots, 4-gallon.....	24.....		96 00	
Vegetable trays.....	10 nests		50 00	
Repairs on tinware			126 96	
				\$986 73
Harness—				
Blankets	9.....	2 22	\$20 00	
Boots	10.....	1 02 $\frac{1}{2}$	10 25	
Collars	4.....	4 25	17 00	
Harness, double	1 set		35 00	
Nets	$\frac{1}{6}$ dozen.....	21 50	3 59	
Pads	3	2 30	6 90	
Dusters	2.....	60	1 20	
Buffalo robes	2.....	11 00	22 00	
Halters.....	3.....	1 40	4 20	
“ neck	1.....		2 00	
Breeching and strap			4 75	
Robe lining	2 yards.....	79	2 50	
Horse covers	1 pair		4 00	
Hame fasteners.....	2 "	1 50	3 00	
Bridle and buckle pad	1.....		5 25	

DISBURSEMENTS FROM APPROPRIATION FOR CURRENT EXPENSES—Continued.

Articles.	Quantity.	Average.	Amount.	Total.
Harness—Continued.				
Housings	1 pair	\$7 00	\$183 09
Nose bag	1.....	.....	85
Rings	3.....	\$ 33½	1 00	
Repairs .....	.....	.....	32 60
House Furnishing Goods—				
Carpet binding	3 pieces	30	\$ 90	92 24 59 18
“ felt	1 package ....	.....	45
Holland shades	177 yards	17	30 09	
Door mats.....	7.....	2 21	15 50	
Feathers	3 pounds	65	1 95	
Marbled oil-cloth	11 pieces	2 85	31 35	
Closet paper.....	1 case .....	.....	12 00
Ice.....	26¾ tons	2 21½	\$59 18	

DISBURSEMENTS FROM APPROPRIATION FOR CURRENT EXPENSES—Continued.

Names.	Occupations.	Days.	Amount.	Total.
John Ireland.....	Laborer	5	\$7 50	\$232 62
William Corbitt....	“	5	7 50	
William Ford.....	“	5	7 50	
Avery Jones	“	5	7 50	
Gross James.....	“	5	7 50	
James Dobson.....	“	5	7 50	
M. M. Daly.....	“	5	7 50	
A. P. Stacy.....	“	5	7 50	
Thomas Cash.....	“	3	4 50	
Robert Gillespie.....	“	5	7 50	
L. L. Vance.....	“	2	3 00	
Wm. Ellingham	“	5	7 50	
John Dobson.....	“	5	7 50	
Jesse Charlton.....	“	7	10 50	
Harvy Green.....	“	5 $\frac{1}{2}$	8 25	
David Walker.....	“	5	7 50	
Wm. Pagan	“	4 $\frac{1}{2}$	6 75	
Charles Downey.....	“	4	6 00	
Wm. Derr.....	“	1	1 50	
William Carroll.....	“	4	6 00	
William Seymour..	“	3 $\frac{1}{2}$	5 25	
Sam Bennett.....	“	2 $\frac{3}{4}$	4 12	
Henry Downey.....	“	4	6 00	
J. F. Brooks.....	“	3 $\frac{1}{2}$	5 25	
William Joyce.....	“	1	1 50	
Charles Walker.....	Man and team.....	4	16 00	
George Hill.....	“ “	4	16 00	
George Sheets.....	“ “	4 $\frac{3}{4}$	19 00	
Edward Evans.....	“ “	4 $\frac{1}{2}$	18 00	
Homer S. Stark.....	Superintending men...	5	5 00	

DISBURSEMENTS FROM APPROPRIATION FOR CURRENT EXPENSES—Continued.

Articles.	Quantity.	Average.	Amount.	Total.
Labor—				
Common	16 $\frac{1}{2}$ days.....	\$ 91	\$15 00	
Man and team	61 $\frac{3}{4}$ "	4 22	260 50	
Horse	70 "	97 $\frac{1}{7}$	63 12	
Labor on gas-holder.....	1 day		6 00	
				\$344 62
Lime.....	534 bushels...	24 $\frac{3}{5}$	\$131 95	131 95
Meats—				
Beef, fresh.....	154,578 lbs....	06 $\frac{1}{2}$	10,047 56	
" dried.....	201 $\frac{1}{2}$ pounds..	12 $\frac{3}{4}$	25 98	
Hams	1,677 " ..	11 $\frac{3}{4}$	196 63	
Lamb	885 " ..	13	115 31	
Lard	2,922 " ..	08	229 49	
Mutton..	9,869 " ..	08	773 33	
Mess pork.....	3 barrels.....	16 50	49 50	
Sausage	1,887 $\frac{1}{2}$ pounds	08 $\frac{5}{9}$	161 92	
Shoulders.....	1,029 " ..	07 $\frac{7}{10}$	79 80	
Tongue.....	353 " ..	06 $\frac{1}{2}$	22 94	
Veal.....	6,583 " ..	12 $\frac{5}{6}$	846 68	
				12,549 14
Milk—				
Milk	307,170 lbs....	1 40	\$4,294 82	
Cream.....	28 gallons.....	75	21 00	
				4,315 82
Miscellaneous—				
Japonica	781 pounds...	06	\$47 94	
Repairing spectacles.....			90	
Money order com.....			66	
Drain tile..	11,024 feet....	1 34	147 40	
Sole leather.....	15 $\frac{1}{2}$ pounds...	32	5 04	
Analysis of water.....			25 00	
Tuning pianos and organ.....			15 00	
Cider faucets.....	1 $\frac{1}{2}$ dozen.....	83 $\frac{1}{3}$	1 25	
Fuse	50 feet.....		40	
Saw-dust	9 loads.....	70	6 25	
Draft			15	
Powder and caps.....	25 pounds....	34	8 50	
Music sheets.....	8.....	69	5 55	
Blasting ice.....			7 50	
Dentistry.....			1 00	
Repairing leather belt.....			3 75	
Choir service..			100 00	
Pomade	2 doz. boxes..	75	1 50	
Acme belt dressing.....	14 pounds....	25	3 50	
Bean poles.....	1,022.....	3 05	30 66	
Chalk	1 box.....		40	
Lace leather.....	3 $\frac{1}{2}$ pounds....	60	2 10	
Strawberry plants.. ..	8,900.....		43 00	
Sweeping chimney.....			1 50	
Wagonette to depot.....			1 00	
Repairing carriage-pole.....			50	
Veterinary service ...			5 00	
Drilling oats	5 $\frac{3}{4}$ acres.....		5 75	
Cutting "	5 $\frac{3}{4}$ "		6 50	
Threshing oats.....	360 bushels...	02	7 20	
Grinding "	376 " ..	04	15 04	
Carpet-beater.....			20	
Wall paper and hanging.....			8 55	
Repairing carpet-sweeper.....	2.....	25	50	

DISBURSEMENTS FROM APPROPRIATION FOR CURRENT EXPENSES—Continued.

Articles.	Quantity.	Average.	Amount.	Total.
Miscellaneous—Continued.				
Tooth-picks.....	1 case .....	.....	\$6 00	
Bank exchange.....	.....	.....	15	
Repairing glass-cutter.....	.....	.....	35	
Berry drawers.....	2.....	\$ 10	20	
Sprinkling walks .....	.....	.....	18 00	
Use of typewriter.....	.....	.....	2 00	
Caligraph ribbon.....	1.....	.....	75	
Repairing caligraph.....	.....	.....	5 00	
Damage done by stock.....	.....	.....	8 00	
Chaplain.....	12 months....	.....	100 00	
Akron cement.....	2 barrels	1 00	2 00	
Storage on trunk.....	.....	.....	10	
Repairing sewing machine .....	.....	.....	1 00	
Feeding and caring for stock.....	.....	.....	3 00	
				\$655 74
Oils—				
Cylinder oil	152 gallons ...	55	\$83 16	
Lard “	80 “	45 ¹ / ₃	36 25	
Neat’sfoot “	5 “	80	4 00	
Petroleum oil	5 “	10	50	
				123 91
Oysters.....	155 ¹ / ₄ gallons ..	1 31 ¹ / ₂	\$204 27	204 27
Papers and periodicals—				
American Agriculturist.....	1 year.....	.....	\$1 50	
“ Grocer	1 “ .....	.....	3 00	
Cincinnati Daily Enquirer.....	1 “ .....	.....	12 00	
Chicago Daily Inter-Ocean.....	1 “ .....	.....	10 00	
Cleveland Daily Leader.....	1 “ .....	.....	10 00	
Cleveland Daily Plain Dealer...	1 “ .....	.....	10 00	
Independent	2 “ .....	.....	5 00	
				51 50
Patients’ expenses—				
Paid on discharge.....	.....	.....	\$14 60	
Returning elopers .....	.....	.....	15 00	
Repairing restraints.....	.....	.....	12 25	
				41 85
Plants, seeds and trees—				
Garden seeds.....	.....	.....	\$80 90	
Refugee beans	¹ / ₄ bushel.	5 00	1 25	
Rye.....	7 bushels.....	55	3 85	
Timothy seed.....	8 “	2 28	18 10	
Lawn grass seed	1 bushel.....	.....	3 50	
Maple trees.....	10.....	75	7 50	
Apple trees.....	8.....	25	2 00	
Poplar	44.....	50	22 00	
Buckeye	1.....	.....	1 50	
Horse Chestnut trees	3.....	2 00	6 00	
				146 60
Postage—				
Stamped envelopes	4,500 .....	.....	\$99 80	
Stamps.....	.....	.....	65 20	
Printed postal cards.....	2,500 .....	.....	29 25	
Box rent.....	9 months.....	.....	3 00	
				197 ²⁵ / ₁₀₀
Poultry—				
Chickens, dressed.....	458 ³ / ₄ pounds..	12	\$54 20	
“ live	374 “	05 ¹ / ₂	20 57	

DISBURSEMENTS FROM APPROPRIATION FOR CURRENT EXPENSES—Continued.

Articles.	Quantity.	Average.	Amount.	Total.
Poultry—Continued.				
Chickens, live.....	127 pounds ...	\$ 29	\$36 40	
Turkeys, dressed.....	1,326 " ..	13	171 91	\$283 08
Rubber goods—				
Blankets	6 dozen	12 00	\$72 00	
Boots	34 pairs	2 30 $\frac{1}{3}$	78 32	
Hose	550 feet.....	13 $\frac{1}{4}$	72 75	
Dash pockets	3.....	2 08	6 25	
Spittoons	1 dozen.....		12 00	
Anti-rattlers	1 "		75	
Tips	12 "	25	3 00	
Jar rubbers.....	1 gross		75	
Tubing	10 $\frac{3}{4}$ feet	13 $\frac{1}{2}$	1 46	
Band	1.....		05	247 33
Scales and testing—				
Spring balances.....	2.....		\$2 85	
Post-office scale	1.....		5 60	
Testing scales.....	5.....		2 00	
Weight.....	1 50-pound ...		25	10 70
Soap and materials—				
Sal soda	2,930 pounds..	01 $\frac{1}{4}$	\$36 37	
Soda ash	16,276 " ..	02 $\frac{1}{4}$	366 21	
Soap, bar.....	6,000 " ..	03 $\frac{5}{6}$	236 25	
" bath	4,575 " ..	04 $\frac{5}{9}$	208 75	
" castile.....	100 " ..	09	9 00	
" shaving	3 boxes.....	2 75	8 25	
" toilet.....	503 $\frac{1}{2}$ pounds..	06	30 35	
" toilet.....	7 $\frac{1}{2}$ dozen.....	1 88	14 10	
Tallow	797 pounds...	04	31 88	941 16
Stationery—				
Bands, rubber	$\frac{3}{4}$ pound		\$ 94	
Record of supplies.....	1		15 00	
Receipts and disbursements	1.....		10 00	
Classification expenditures	1.....		10 00	
Library entry book.....	1.....		7 50	
Small ledger	1.....		1 25	
Day book.....	1 5 quires		1 50	
Night-watch reports.....	1,200 pages ..		14 50	
Record book	1 3 quires		75	
Admission record.....	1 200 pages...		7 50	
Check books.....	15.....		25 00	
Memorandum books	1 $\frac{1}{2}$ gross	4 78	7 17	
Steward's affidavits	50.....	05	2 50	
Monthly reports	250.....	01 $\frac{2}{5}$	3 50	
Annual "	750.....	01	8 50	
Clothing requisitions.....	200.....	3 50	7 00	
" State patients	50.....	06 $\frac{1}{2}$	3 25	
Probate Judge's statements.....	250.....	01	2 50	
Donation blanks	400.....	01	4 50	
Patient's record.....	500.....		6 75	
Clothing lists	2 M	3 00	6 00	
Envelopes	$\frac{1}{8}$ M		80	
Lead pencils.....	2 gross	1 00	2 00	
Lithograph note heads.....	2,500	68	17 00	
Soap orders	2,500	22	5 50	
Steward's orders.....	1 M		3 00	

DISBURSEMENTS FROM APPROPRIATION FOR CURRENT EXPENSES—Continued.

Articles.	Quantity.	Average.	Amount.	Total.
Stationery—Continued.				
Storekeeper's orders	1,500	\$1 06 ² / ₃	\$16 00	
Paper, commercial note.....	2 ¹ / ₂ reams	1 71	3 85	
“ printing	80 pounds	06	4 80	
“ wrapping	295 “	06 ¹ / ₂	19 18	
Pencil pads.....	16	18	2 84	
Pens	10 gross ..	63	6 30	
Printing supt's annual report..	.....	.....	27 50	
Tags	2 M	75	1 50	
Vouchers	1 “ .....	.....	6 00	
Lithographs	2 “	6 00	12 00	
Memorandum calendar	1 .....	.....	25	
Railroad Guide	1 .....	.....	25	
Dance admission cards	500	45	2 25	
Cards	500 .....	.....	2 75	
Paper tubes for reports .	25 .....	.....	1 00	
Rubber stamp and ink	1 .....	.....	50	
Bottle purple ink	1 .....	.....	25	
				\$281 13
Stock and material for green-house—				
Wire designs	33	28 ² / ₃	\$9 46	
Immortelles	2 bunches	35	70	
Grafting wax	1 pound .....	.....	40	
Flower seeds .....	.....	.....	9 45	
“ pots	3,887	01 ³ / ₄	56 50	
Plants ....	.....	.....	41 25	
Hanging baskets	1 dozen .....	.....	3 50	
				121 26
Stock—				
Boar pigs.....	2	9 62 ¹ / ₂	\$19 25	19 25
Straw	54 ¹ / ₂ tons	9 81 ¹ / ₂	534 89	534 89
Telegrams—				
Messages	133 .....	.....	\$45 16	
“ delivered	163 .....	.....	16 45	
				61 61
Telegraph supply—				
Oil vitriol	217 pounds ...	02	\$4 34	
Mercury	10 “ ...	65	6 50	
Winding magnets.....	.....	.....	50	
				11 34
Telephone—				
Rent of .....	.....	.....	\$232 50	
Repairs .....	.....	.....	1 10	
Messages to out stations..	.....	.....	3 15	
				236 75
Traveling expenses—				
Trip to Columbus ...	.....	.....	\$15 35	
Trips to Painsville .....	.....	.....	7 85	
“ Put-in Bay .....	.....	.....	3 80	
“ Chagrin Falls.....	.....	.....	1 25	
Toll on plank road .....	.....	.....	10	
Steam and horse car fares to city	.....	.....	32 90	
				61 25
Vegetables—				
Beets	4 dozen	20	\$ 80	
String beans	12 bushels....	1 00	12 00	
Cucumbers	1 ¹ / ₂ “	2 93	4 40	
“	1,124 “	35c hund.	6 20	
Horseradish roots.....	1 ³ / ₄ “	2 00	3 50	
Onions	62 “	70	43 40	

DISBURSEMENTS FROM APPROPRIATION FOR CURRENT EXPENSES—Continued.

Articles.	Quantity.	Average.	Amount.	Total.
Vegetables—Continued—				
Onions	½ dozen.....		\$ 05	
Peas	½ bushel.....	\$1 40	70	
Potatoes.....	3,459½ bushels	56	1,935 89	
“ sweet	19 barrels.....	2 31	43 85	
Pumpkins	514.....	07 ³ / ₅	39 20	
Radishes	1½ dozen		45	
Rutabagas	201 bushels..	37½	75 80	
Hubbard squashes	200.....	07	14 00	
Tomatoes.....	2 bushels.....	1 32½	2 65	
				\$2,182 89
Vinegar	168 gallons ...	09	\$15 12	15 12
Wood and willow-ware—				
Baskets, bushel.....	1 1-bushel....		20	
“ “	4 1½ bushel..	45¾	1 83	
“ market	2 dozen	80	1 60	
“ clothes	1½ “	11 00	16 50	
Wooden bowls.....	1¾ “	3 00	1 00	
“ pails.....	6 “	1 50	9 00	
Wash boards	1 “		3 00	
				33 13
Lunches in city			\$36 15	36 15
Horse feed and shelter.....			25 10	25 10
Total				\$100,936 40

DISBURSEMENTS FROM APPROPRIATION FOR BOOKS AND PICTURES—DEFICIENCY.

Binding, as follows—		Average.	Amount.	Total.
American Journal of Insanity, 2 volumes		80 cents.	\$1 60	
Brain, 3 “		90 “	2 70	
Journal of Mental Science, 5 “		80 “	4 00	
Alienist and Neurologist, 3 “		80 “	2 40	
Lancet, 4 “		80 “	3 20	
London Lancet, 2 “		80 “	1 60	
American Druggist, 1 volume		90 “	90	
Druggists’ Circulars, 1 “			90	
Canadian Practitioner, 2 volumes		80 cents.	1 60	
Canadian Journal of Mental Science, 1 volume			80	
North American Review, 1 “			80	
Miscellaneous, 1 “			73	
Galaxy, 1 “			80	
Western Penn. Asylum Reports, 1 “			80	
Michigan Asylum Reports, 1 “			80	
Medical Record, 2 volumes.....		60 cents.	1 20	
New York Medical Journal, 4 “		60 “	2 40	
Cincinnati Lancet and Clinic, 12 “		60 “	7 20	
				\$34 43

DISBURSEMENTS FROM APPROPRIATION FOR BOOKS AND PICTURES.

Articles.	Amount.	Total.
1 He Fell in Love with his Wife.....	\$1 00	
1 Landon's Physics	5 20	
1 Food for the Invalid	1 00	
1 Food and Feeding.....	1 00	
1 New Indexed Atlas of the World	8 60	
1 Ten Dollars Enough	70	
Binding Harper's Magazine, 12 vols., @ \$1.10.....	13 20	
" Scribner's Monthly, 5 " 80.....	4 00	
" Century, 7 " 1.00.....	7 00	
" Atlantic Monthly, 6 " 80.....	4 80	
" American Journal of Med. Science, 3 vols., @ 62½c.....	1 87	
" Medico Legal Journal, 2 vols., @ 90c.....	1 80	
Alienist and Neurologist, 1 year	5 00	
Canadian Practitioner, 2 years, @ \$3.00.....	6 00	
1 Functions of the Brain	3 20	
1 Nickel on Paradise	4 60	
1 Psyciatry—Mincot	2 20	
1 Lessons in Nursing.....	80	
1 Childhood, etc.....	1 05	
1 Zury	1 05	
1 Sons and Daughters	1 05	
1 Balzac	1 05	
1 Saranesca.....	1 05	
1 Fair God	1 05	
1 Social Usages ..	88	
1 set Smiles—4 volumes.....	2 50	
Lancet and Clinic.....	1 40	
1 Blot on Brain	2 40	
1 Ross on Nervous Diseases	4 40	
Medico Legal Journal, 2 years.....	6 00	
Cleveland Medical Gazette, 1 year.....	1 00	
1 Cleveland Directory, 1887, 1888....	5 00	
Binding 2 volumes.....	3 50	
1 Little Fishers.....	1 05	
1 Under the Lilaces.....	1 05	
1 Spun from Facts	1 05	
1 Royal Gentleman.....	1 05	
1 After School Days.....	70	
1 U. S. Postal Guide.....	1 50	
1 Success is Won	1 00	
1 Famous Queens.....	1 50	
1 Ourselves and Our Neighbors.....	1 00	
1 Operetta... ..	1 00	
1 Master of the Situation.....	1 11	
1 Lad's Love	1 00	
1 One Week Away from Time.....	1 25	
1 Ruse's Medical Jurisprudence	3 20	
1 My Confessions.....	70	
1 Vice Versa.....	70	
1 Gretchen	1 05	
		\$125 26

DISBURSEMENTS FROM APPROPRIATION FOR TRUSTEES' EXPENSES.

To whom paid.	For what purpose.	Amount.
W. M. Beebe.....	Expenses for twelve months.....	\$30 00
James C. Johnson.....	“ fifteen “	66 45
D. L. King.....	“ “ “	45 55
R. K. Paige.....	“ “ “	42 00
John Tod	“ “ “	30 00
John Zimmerman	“ “ “	36 00
Total.....	.....	\$250 00

DISBURSEMENTS FROM APPROPRIATION FOR CARPETS.

Articles.	Quality.	Average.	Amount.	Total.
Carpet, felt lining.....	319 pounds...	\$ 02½	\$ 7 98	
“ quilted lining.....	6 bales	10 00	60 00	
Oil cloths, ¾ wide... ..	9¼ yards.....	90	8 33	
“ ¾ “	120 “	40	48 00	
Corticene.....	18½ “	90	16 65	
Carpet, ingrain.....	865 “	75	648 84	
Ingrain rug.....	1 only.....	.....	10 20	
				\$ 800 00

DISBURSEMENTS FROM APPROPRIATION FOR CARPETS.—Deficiency.

Articles.	Quality.	Average.	Amount.	Total.
Carpet, Ingrain	52 yards.....	\$ 80	\$ 42 00	
“ body Brussels.....	149½ “	1 15	171 48	
“ “ “ border	173¼ “	1 15	199 25	
				\$ 412 73

DISBURSEMENTS FROM APPROPRIATION FOR SALARIES OF OFFICERS.

Names.	Office.	Time.		Amount.	Total.
		Months.	Days.		
Jamin Strong.....	Superintendent	12	.....	\$1,200 00	
C. W. Diehl.....	Steward..	12	.....	800 00	
Fred. D. Burton.....	Asst. physician.....	12	.....	700 00	
E. G. Carpenter.....	“ “	12	.....	700 00	
W. W. Leonard.....	“ “	12	.....	700 00	
Mary L. Strong.....	Matron.....	12	.....	400 00	
Francis Gallagher.....	Book and storekeep'r	12	.....	566 72	
					\$5,066 72

DISBURSEMENTS FROM APPROPRIATION FOR RE-BUILDING DRYING-ROOM.

Articles.	Quantity.	Average.	Amount.	Total.
Jenkins' globe valves, 1-in.....	4.....	\$ 98	\$3 92	
Hex tapped-nuts, $\frac{7}{8} \times \frac{1}{2} \times \frac{7}{16}$	4 pounds.....	12	48	
" " $\frac{1}{2}$ -in—50.....	3 $\frac{1}{2}$ ".....	09	32	
Hollow punch, $\frac{5}{8}$ -in.....	1.....		60	
O. H. rivets, $\frac{3}{8} \times \frac{3}{16}$	3 $\frac{1}{4}$ pounds.....	08	26	
" $\frac{1}{4} \times \frac{7}{8}$	5 ".....	09	45	
Close ret. bends, 1-in.....	125 ".....	06 $\frac{3}{5}$	8 25	
Black pipe, 1-in.....	1,033 feet.....	04	49 07	
Carriage bolts, $\frac{1}{4} \times 2\frac{1}{4}$	104.....	$\frac{1}{2}$	62	
" " $\frac{1}{4} \times 4$	104.....	$\frac{3}{4}$	78	
Washers for car. bolts.....	1 pound.....		10	
Bolts, nuts on each end, $\frac{3}{4}$ —65.....	104 pounds..	5 $\frac{1}{2}$	5 72	
Screws, $1\frac{1}{2} \times 16$ — 2×12 — 3×16	31 $\frac{1}{2}$ gross.....	45	14 18	
Wire nails, 8 ^d	1 keg.....		3 50	
Iron casting.....	581 pounds..	03	17 43	
Making angle iron.....	184 ".....	5 $\frac{1}{2}$	10 12	
Glasses, $\frac{3}{4} \times 16$	2.....	19 $\frac{1}{2}$	39	
Making flanged manifolds.....	12.....	6 00	72 00	
Facing manifolds.....			7 00	
Flanges faced and drilled, $1\frac{1}{2} \times 6$	10.....	54	5 40	
Blank flanges.....	10.....	42	4 20	
Drilling and bolting manifolds.....	20.....	84	16 80	
Mach. bolts, $\frac{1}{2} \times 1\frac{3}{4}$ — $\frac{1}{2} \times 2$	150.....	2 $\frac{1}{2}$	3 75	
Flange unions.....	5.....	40	2 01	
Lumber—uppers—16.....	641 feet.....	50 00	32 05	
Clear lumber, 12— 2×14 —16.....	128 feet.....	25 00	3 20	
Common flooring kiln-dried.....	3,500 feet.....	29 00	101 50	
Cypress lumber, $\frac{4}{4}$ -in.....	13 ".....	04 $\frac{1}{2}$	59	
" 2-in.....	798 ".....	05	39 90	
" 1 $\frac{1}{2}$ -in.....	2,176 ".....	05	108 80	
Poplar lumber, $\frac{5}{4}$ -in.....	146 ".....	04	5 84	
Hard maple flooring, $\frac{1}{4}$	2,200 ".....	04	88 00	
Planing cypress.....			6 00	
Cartage.....	5 loads.....	1 00	5 00	
Kiln-dried maple, $\frac{5}{4} \times 14$	311 feet.....	40 00	12 44	
Cartage on same.....			1 00	
Running maple moulding.....			3 90	
Building paper.....	643 pounds..	1 $\frac{3}{4}$	11 25	
John Brooks, carpenter.....	52 days.....	2 50	130 00	
Harvy Green, ".....	50 $\frac{1}{2}$ ".....	2 25	114 18	
Vial Sailsbury, ".....	35 $\frac{1}{2}$ ".....	2 50	88 75	
Alsom Sailsbury, ".....	13 $\frac{1}{2}$ ".....	1 50	20 25	
				\$1,000 00

DISBURSEMENTS FROM APPROPRIATION FOR FENCING.

Articles.	Quantity.	Average.	Amount.	Total.
Posts, 6-in. square.....	80.....	\$ 33	\$26 40	
" ".....	50.....	32	16 00	
" squared split.....	50.....	22	11 00	
" cedar, round heavy.....	160.....	35	56 00	
White oak, 14×14 — 6×6	8=445 feet....	20 M	8 90	
Boards, barn, 16 feet.....	704.....	19	13 38	
" fencing, 16 feet.....	1,104.....	16	17 67	
Select common, 2 $\frac{1}{2}$	55.....	40	2 20	
Scantling, 3×4 , 16 feet.....	2,568....	19	48 79	

DISBURSEMENTS FROM APPROPRIATION FOR FENCING—Continued.

Articles.	Quantity.	Average.	Amount.	Total.
Steel wire nails, 8 ^d	1 keg.....		\$4 25	
“ “ 20 ^d	1 “.....		3 75	
Staples.....	30 pounds.....	\$ 06	1 80	
Tacks, double-pointed.....	7 papers.....	05	35	
Wire netting ..	573 sq. feet...	$\frac{9}{10}$	5 16	
Ribbon wire.....	970 pounds...	$4\frac{3}{4}$	46 08	
Wire stretchers.....	1.....		65	
Yellow ochre.....	10.....	03	30	
Harvy Green, carpenter.....	57 $\frac{1}{4}$ days.....	2 12 $\frac{1}{2}$	121 65	
Wm. Corbitt, laborer.....	24 $\frac{6}{10}$ “.....	1 50	36 92	
Pat. Hanley, “.....	26 “.....	1 50	39 00	
Wm. Heisler, “.....	26 $\frac{1}{2}$ “.....	1 50	39 75	
				\$500 00

DISBURSEMENTS FROM APPROPRIATION FOR RECONSTRUCTING TWO WARDS.

Articles.	Quantity.	Average.	Amount.	Total.
Pictures.....	30.....	\$4 51 $\frac{2}{3}$	\$135 50	
Hair pillows, 2 $\frac{1}{2}$ pounds.....	25.....	1 47	36 75	
Woven wire mattresses.....	25.....	3 50	87 50	
Hair mattresses.....	8.....	9 00	72 00	
Blankets, 50 pairs.....	219 pounds...	87 $\frac{1}{2}$	191 62	
Bed spreads.....	50.....	1 00	50 00	
Piano casters, 1 $\frac{1}{4}$ -in.....	16 sets.....	25 $\frac{1}{2}$	4 09	
Matting.....	207 $\frac{1}{2}$ yards....	45	93 38	
Carpet lining.....	200.....	03	6 00	
Madras for curtains.....	25.....	55	13 75	
Rings.....	5 dozen.....	60	3 00	
Hooks.....	5 “.....	10	50	
Picture nails.....	1 gross.....		2 00	
Akron cement.....	2 sacks.....	30	60	
Portland “.....	14 barrels.....	3 00	42 00	
Lime.....	10 “.....	75	7 50	
Calcined plaster.....	2 “.....	1 55	3 10	
Sand.....	8 loads.....	1 25	10 00	
Hard brick.....	2,000.....	5 75	11 50	
Steel nails, 10 ^d	1 keg.....		2 25	
Brass tubing, 2-in.....	3 $\frac{7}{8}$ feet.....	30	1 15	
Black pipe, $\frac{3}{8}$, $\frac{3}{4}$, 1, 1 $\frac{1}{4}$ —2-in.....	1,091 $\frac{5}{12}$ feet..	06 $\frac{1}{3}$	74 74	
Galvanized pipe, 1 $\frac{1}{4}$ -in.....	107 $\frac{7}{12}$ “... ..	12	13 71	
Pipe die, $\frac{3}{8}$	1.....		1 00	
Crosses, 2-in.....	6.....	26 $\frac{1}{2}$	1 59	
Tees, 1 $\frac{1}{2}$ x1 $\frac{1}{4}$ —1 $\frac{1}{4}$ x1 $\frac{1}{4}$ —1x $\frac{3}{8}$	24.....	10	2 38	
Ells, 1 $\frac{3}{4}$ — $\frac{3}{8}$	42.....	\$ 02 $\frac{2}{3}$	1 11	
Drop, $\frac{3}{8}$ -inch.....	12.....	03	36	
Bushings, 2 to 1 $\frac{1}{2}$	4.....	08	32	
Plugs.....	38.....	04 $\frac{1}{2}$	1 74	
Angle valves, $\frac{1}{2}$ inch.....	4.....	1 36 $\frac{1}{2}$	5 46	
Globe valves.....	4.....	63	2 52	
Service cocks.....	1.....		1 01	
Doors, 27 $\frac{3}{4}$ x60 inches, 4 panels.....	4.....	1 60	6 40	
“ 27 $\frac{3}{4}$ x30 “ 2 “.....	2.....	1 25	2 50	
Clear poplar lumber, $\frac{5}{4}$	726 feet.....	40 00	29 04	
“ “ $\frac{5}{8}$	62 “.....	30 00	1 86	

DISBURSEMENTS FROM APPROPRIATION FOR RECONSTRUCTING TWO WARDS—Continued.

Articles.	Quantity.	Average.	Amount.	Total.
Kiln drying poplar.....	.....	.....	2 76	
Planing ".....	.....	.....	1 60	
Cartage ".....	.....	.....	1 00	
Oak flooring, $\frac{5}{4}$	1,369 feet.....	40 00	54 76	
Box lumber, 8-1x12-16.....	128 ".....	42 00	5 37	
Uppers, 2-inch 4 plank.....	176 ".....	50 00	8 80	
Richard Woodley, mason.....	37 $\frac{1}{4}$ days.....	3 50	130 38	
Mason's tender.....	44 ".....	1 75	77 00	
Richard Woodley, plasterer ..	16 ".....	3 50	56 00	
Plasterer's tender.....	10 ".....	1 75	17 50	
Vial Sailsbury, carpenter.....	43 $\frac{1}{2}$ ".....	2 50	108 75	
John Brooks, ".....	32 $\frac{1}{2}$ ".....	2 50	81 25	
Harvey Green, ".....	9 ".....	2 25	20 25	
Richard Woodley, laborer.....	4 $\frac{3}{4}$ ".....	1 75	8 31	
Select lumber, 12-1x12-16.....	192 ".....	33 00	6 34	
				\$1,500 00

DISBURSEMENTS FROM APPROPRIATION FOR NEW FURNITURE AND REPAIRING OLD.

Articles.	Quantity.	Average.	Amount.	Total.
Chairs.....	159.....	\$1 18	\$188 12	
Stools.....	1 only.....	.....	50	
Wire folding cots.....	1 ".....	.....	3 00	
Single ash bedsteads.....	50.....	5 00	250 00	
Woven-wire mattresses.....	6.....	3 50	21 00	
Hair mattresses.....	29.....	9 00	261 00	
Angle bed irons.....	200.....	12 $\frac{1}{2}$	25 00	
Casters for beds, 1 $\frac{1}{4}$ -inch.....	29 sets.....	24 $\frac{3}{4}$	7 16	
Strippel Bros., upholstering.....	4 $\frac{1}{2}$ days.....	2 50	11 25	
Silk tapestry.....	3 yards.....	2 00	6 00	
Cotton ".....	1 $\frac{1}{2}$ ".....	1 35	2 03	
Gimp.....	11 ".....	05	55	
				\$775 61

DISBURSEMENTS FROM APPROPRIATION FOR PAINTING.

Articles.	Quantity.	Average.	Amount.	Total.
White lead.....	8,000 pounds..	\$ 06	\$478 75	
Red ".....	50 ".....	10	5 00	
Boiled Linseed oil.....	100 gallons ...	35 $\frac{4}{5}$	35 85	
Raw ".....	245 ".....	37	91 37	
Benzine.....	155 ".....	08	12 65	
Turpentine.....	154 $\frac{1}{2}$ ".....	41 $\frac{9}{10}$	64 71	
" dryer.....	15 ".....	70	10 50	
Crockett's wood preservative.....	50 ".....	2 00	100 00	
Varnish.....	21 ".....	1 56	32 85	
Black Japan.....	15 ".....	50	7 50	
Ultra Marine Blue.....	25 pounds....	25	6 25	
" " in Japan.....	10 ".....	75	7 50	

DISBURSEMENTS FROM APPROPRIATION FOR PAINTING—Continued.

Articles.	Quantity.	Average.	Amount.	Total.
Ivory Drop Black.....	35 “	21½	7 50	
Chrome Yellow.....	5 “	20	1 00	
Ochre.....	50 “	02	1 00	
French Crown Green	15 “	18	2 70	
Rose pink	1 pound.....	.....	25	
English Vermillion, dry.....	5 pounds.....	75	3 75	
Burnt Umber.....	5 “	15	75	
Indian Red.....	5 “	20	1 00	
Red Seal Zinc.....	100 “	09	9 00	
French zinc in oil.....	50 “	09	4 50	
Liquid Gold Bronze.....	3 gallons	2 00	6 00	
Powdered Gold Bronze	5 pounds	1 00	5 00	
Asphaltum	5 gallons	60	3 00	
Wall brushes, 4½ inch.....	12.....	1 33	15 97	
Varnish brushes.....	2.....	1 35	2 70	
Whitewash brushes.....	12.....	55	6 60	
Setting diamond in glass-cutter.....	.....	.....	1 50	
Border for painted wards.....	400 yards.....	06	24 00	
				\$949 15

DISBURSEMENT FROM APPROPRIATION FOR HORSES.

Number purchased.	Amount.	Total.
One dapple bay draft horse, six years old, weighing 1,315 lbs...	\$225 00	
Credit by sale of Sorrel “Charlie,” purchased by Richard Braund, for.....	65 00	
		\$160 00

DISBURSEMENT FROM APPROPRIATION FOR OUTLET TO SEWER.

To whom paid.	For what purpose.	Amount.
Benzetta Williams	Civil Enginer and Specialist in construction of sewers, for making plans and specifications, and estimates of cost of connecting Asylum sewer with the proposed Broadway sewer.....	\$150 00

ARTICLES MADE IN SEWING ROOM.

Articles.	Number.
Aprons, men's	206
“ women's.....	295
Basques	5
Bibs.....	30
Bread covers.....	3
Carriage cover	1

DISBURSEMENTS FROM APPROPRIATIONS FOR ORDINARY REPAIRS.

Date.	To whom paid.	Amount.	Total.
1886.	Bell, Cartright & Co.—		
Oct. 21	For 42 ft. 9—1x3½—16 G. common, D. 2 S., @ \$25..	\$1 05	
	32 ft. 2 to 3 bk. 16 D. 2 sides, @ \$18.00	58	
	112 ft. 2—6x8—1, @ \$1.00.....	1 57	
Nov. 8	72 ft. 1—6x8—18, @ 15.00.....	1 08	
	37 ft. 2—4x4—14, @ 14.00.....	52	
	256 ft. 24—2x4—16 dressed 2 S., @ \$22.00	5 63	
	500 D. common, 16 feet, @ \$15.00	7 50	
	4 sash, 7x9—9 lts., @ 60c	2 40	
	6 “ 7x9—6 “ @ 40c	2 40	
			\$22 73
Oct. 27	David Brown—		
	For putting gravel roof on pigpen, 725 ft., @2½c.....		18 12
	Thomas Burton—		
16	For 3 loads green sod, @ \$1.00.....		3 00
	Wm. M. Caine—		
Nov. 8	For 30 ft. × 5, 150 ft. flagging sidewalk, @ 12c....		18 00
Oct. 22	Lord, Bowler & Co.—		
	For 1½ hours forging valve stem, @ 70c.....	1 05	
	14 pounds steel, @ 7c	98	
	1½ hours' lathe work on valve stem,@ 40c.....	60	
	6½ “ “ “ “ “ 40c.....	2 60	
	3½ “ planing on “ “ 40c	1 40	
	½ “ vise work on “ “ 40c.....	20	
	½ “ planing work on valve stem, 40c.....	20	
Nov. 13	4 3½-inch hard rubber valves, @ 60c.....	2 40	
			9 43
	Martin & Barriss—		
1	For 60 feet ¾-inch clear black walnut, @ 10c.....	\$6 00	
	planing same	15	
			6 15
	W. H. H. Peck—		
Oct. 19	For 10 lbs. rubber (sheet) packing, @ 30c.....	\$3 00	
	2½ “ plain square piston packing, @ 40c.....	1 00	
			4 00
	Benjamin Seymour—		
27	For 3¼ days' mason work, @ \$3.50	\$11 38	
	2¼ “ helper, @ \$1.50.....	4 12	
			15 50
	A. Waldeck—		
Nov. 13	For making 22 brass locks for covered beds, \$3.50	\$51 70	
	“ 24 “ keys	4 32	
	repairing 1 old lock.....	35	
			56 37
	John Wherritt—		
15	For one month's carpenter work.....		40 00
	Richard Woodly—		
10	For 3 days' plastering, @ \$3.50.....		10 50
	Worswick Manufacturing Co.—		
Oct. 18	For 1 pair 1¼-in. brass tubing I. P. L., 9 lbs., @ 25c	2 25	
	1 “ 1¼ cut.....	05	
	4½ lbs. ¾x½ tees mall., @ 13c=59c.		
	1¾-in. ½ S. O. ells, @ 13c=23c.		
		82	
	30 % discount, 25	57	
	For 6 ¾ floor flanges, @ 18c=\$1.08, 65 %	38	
	6 1 lb. Union mall, @ 17c.....	1 02	

ORDINARY REPAIRS—Continued.

Date.	To whom paid.	Amount.	Total.
1886. Nov. 2	Worswick Manufacturing Co.—Continued. For 60 ft. 4-in. S. K. soil pipe, @ .36=\$21.68 2 4x4 S. P. Ys., \$1.20= 2.40 2 4x $\frac{3}{4}$ S. traps, 1.50= 3.00 1 4x $\frac{1}{2}$ S. " 1.50= 1.50 \$28.50, 60 %	\$11 40	
	12 $\frac{3}{4}$ pipe hooks.....	11	
	12 $\frac{3}{4}$ ret. bends, G. I. O. P., @ 20c=\$2.40, 65 %	84	
4	12 $\frac{3}{4}$ hook plates, @ 7c=84c, 65 %	29	
9	18 $\frac{3}{4}$ G. I. tees, @ 13c=\$2.34		
	6 $\frac{3}{4}$ x $\frac{3}{8}$ bushings, @ 7c=42c \$2.75, 65 %	97	
	Bell, Cartright & Co.— For lumber as follows:		\$17 88
24	171 feet, 8—4x 4—16; 64 " 4—2x 6—16; 384 " 12—2x12—16; 213 " 20—2x 4—16+832 feet, @ \$14.00..... 1000 " D., common..... 80 " 4—2x6—20, @16.00.....	\$11 65 15 00 1 28	
	David Brown— For one day's work repairing laundry roof ..		27 93 2 50
19	H. C. Montgomery & Co.— For 12 1-in. rose handles, @ 8c..... 12 $\frac{3}{4}$ -in. " 8c..... 6 $\frac{1}{2}$ -in. Jenkins' packing, @ 8c..... 12 $\frac{3}{4}$ -in. " 10c..... 12 1-in. " 10c.....	96 96 48 1 20 1 20	
	W. H. H. Peck— For 20 lbs. $\frac{1}{8}$ -in. Bd. P. packing, @ 30c.....		4 80 6 00
Dec. 1	Taylor & Boggis Foundry Co.— For 5 Ea. rings and small covers, } 146 lbs. casting 2 square plates, 4 large square plates, 360+146=506 lbs., @ 3c		15 18
15	John Wherritt— For 1 month's carpenter work		40 00
Nov. 15	Worswick Manufacturing Co.— For 4 $\frac{1}{2}$ lbs. brass castings, (red metal), @ 28c..... For work on feed pump, as follows: Aluens, machinist, 48 $\frac{3}{4}$ hours' time, @ 40c... Brown, " 32 " 40c... Long, " 5 " 40c... Butcher, " 1 " 40c... Leary, " 11 $\frac{3}{4}$ " 40c... Walker, " 3 " 40c... Draege, brass finisher, $\frac{1}{2}$ " 50c... Carriss, pattern maker, 6 $\frac{1}{2}$ " 50c... Shepherd, " 2 $\frac{1}{2}$ " 30c... Smith, forging key and iron	\$1 26 19 50 12 80 2 00 40 4 70 1 20 25 3 25 75 22 36 60 10 1 92 1 56 70 30 2 50 39	
	1 sheet rubber packing, 1 lb		
	1 $\frac{1}{2}$ lb. square rubber packing, @ 40c.....		
	hemp packing		
	48 lbs. C. I. packing, @ 4c.....		
	6 lbs. composition, @ 26c.....		
	2 2 $\frac{1}{2}$ -in. angle valves, @ \$1.00=\$2.00, 65 %		
	making packing nuts.....		
	6 ft. 1-in. I. P. S. brass, 10 lbs., 25c.....		
	4 $\frac{1}{4}$ lbs. 1 locknuts, @ 13c=55c, 30 %		
			54 76

ORDINARY REPAIRS—Continued.

Date.	To whom paid.	Amount.	Total.
1886. Dec. 18	Bell, Cartright & Co.— For lumber as follows:		
24	640 feet, 20—2x12—12—16, @ \$15.00.....	\$9 60	
	72 " 4—2x6—18 } 221 ft., @ \$15.00.....	3 31	
	85 " 4—4x4—16 }		
	64 " 4—4x4—12 }		
	1,000 feet D. common, 16	16 00	
			\$28 91
29	William Bingham & Co.— For 1 bar $\frac{3}{8}$ sq. Norway iron, 7 lbs., @ $5\frac{1}{2}$ c.....	\$ 37	
	1 " $\frac{1}{2}$ " 12 " 5c.....	60	
	1 " $\frac{1}{2}$ " 16 " 5c.....	80	
	1 " $\frac{1}{2}$ x1 $\frac{1}{2}$ Com. iron. 25 " $2\frac{1}{10}$ c.....	52	
	1 " 1x1 $\frac{1}{2}$ " 37 " "	78	
	1 " 1 $\frac{1}{2}$ x1 $\frac{3}{4}$ " 35 " "	73	
	1 " $\frac{1}{2}$ x1 $\frac{3}{4}$ Norway iron, 44 lbs., @ 4c.....	1 76	
	98 $\frac{1}{2}$ feet, 3 gas-pipes, @ 55c.=\$53.95, 55%.....	24 28	
			29 84
21	Edward H. Foster— For 4 doz. $\frac{3}{8}$ -in. L. burr cocks, @ \$6.00=\$24.00.....		
	6 % discount.....		9 60
Nov. 20	A. T. Osborne & Co.— For 425 lbs. whiting, @ $\frac{3}{4}$ c.....	\$3 19	
Dec. 4	barrel containing whiting	25	
1887. Jan. 1	5 galls. Ex. B. Japan, @ 50c.....	2 50	
8	2 galls. asphalt, @ 75c.....	1 50	
15	1 barrel raw oil, 52 $\frac{4}{5}$ galls., @ 38c.....	19 86	
	5 galls. turpentine, @ 48c.....	2 40	
	500 lbs. white lead, @ 7c.....	35 00	
	5 lbs. 1st quality Ultra blue, @ 25c.....	1 25	
	5 lbs. T. C. green, @ 20c.....	1 00	
	5 lbs. burnt amber, @ 20c	1 00	
			67 95
8	Taylor & Boggis Foundry Co.— For 142 lbs. iron casting for laundry, @ 3c.....		4 26
15	John Wherritt— For 1 month's carpenter work		40 00
1886. Dec. 31	Richard Woodley— For 4 days' labor, plastering, @ \$3.25.....		13 00
Dec. 16	Geo. Worthington & Co.— For 3 $\frac{1}{4}$ lbs. B fittings, @ 13c.=42c., 25%.....	\$ 31	
	224 $\frac{3}{4}$ feet $\frac{3}{8}$ black pipe, @ 3 $\frac{3}{4}$ c.=\$8.42, 40%.....	5 05	
	36 $\frac{3}{8}$ cast T's, @ 7c.=\$2.52, 65%.....	88	
			6 24
1887. Feb. 1	Wm. P. Braund— For 5 bolts for fire escape ladder, @ 25c.....	\$1 25	
	1 iron for gas-house.....	30	
	steeling 2 iron bars	75	
	repairing 3 " @ 15c.....	45	
	" seat iron for spring wagon.....	10	
			2 85
Jan. 19	Bell, Cartright & Co.— For 44 ft. 2—2x6=22 select Norway, D. 2 S., @ 30c.	\$1 32	1 32
20	Chafer & Becker— For 11 lbs. $\frac{1}{8}$ Jenkins packing, @ 72c	7 92	7 92
1886. Sept. 3	Lowman & Co.— For setting box on buggy wheel	1 25	1 25

ORDINARY REPAIRS—Continued.

Date.	To whom paid.	Amount.	Total.
1886.	E. Hymrod—		
Jan. 20	For 4 hours' time repairing conductor pipe, @ 30c	\$1 20	
	1 lb. solder used	20	
Feb. 11	1 day's time repairing conductor pipes	3 50	
	1½ lbs. solder used, @ 18c	27	
	8 " galvanized iron pipe, @ 12c	96	
			\$6 13
	R. Mitchell & Sons—		
Nov. 16	For 2 dozen No. 2 coat and hat hooks, @ 10c	\$ 20	
18	25 " 5/16x4 carriage bolts, @ 2c	50	
Dec. 20	2½ " No. 7 S. hooks, @ 12c	30	
	½ " No. 6 " 20c	10	
Jan. 5	1 " 1½x2½ bolts	15	
			1 25
1887.	Montgomery & Co.—		
Feb. 2	For 6 No. 1 Globe valves, @ \$2.10=\$12.60, 50 %		6 30
	A. T. Osborne & Co.—		
Jan. 28	For 5 gallons turpentine, @ 49c	\$2 45	
	can containing turpentine	65	
	5 lbs. D. C. schellac, @ 25c	1 25	
	John Wherritt—		4 35
Feb. 15	For 1 month's carpenter work		40 00
	Geo. Worthington & Co.—		
Jan. 28	For 6½ lbs. B. fittings, @ 13c=81c, 25 %	\$ 61	
	6 ¾ ells, 2¾ lbs., @ 13c=36c, 25 %	27	
	46 lbs. 1 Sq. Norway iron, @ 4c	1 84	
Feb. 8	1 roll ½ rd. packing, 5½ lbs., @ 45c	2 48	
	1 " ¼ " 10½ " 45c	4 73	
			9 93
	Wright & Knauff—		
Jan. 15	For 2 bbls. g'd fire-clay, @ \$1.00		2 00
	Worswick Manufacturing Co.—		
Feb. 2	For 24 ¾ burner cocks, @ 50c=\$12.00, 50 %	\$6 60	
	8 ¾ service cocks, @ \$1.00=8, 65 %	2 80	
	6 ¾ hose nipples, @ \$3.50 per doz.=\$1.75, 60 %	70	
9	For 24 ¾ lock nuts		
	18 1 "		
	12 1½ "		
	12 1¼ "		
	6 2 " =17 lbs., 13c=\$2.21, 25 %	1 66	
9	For 24 No. 2 C. I. ells, @ 40c=\$9.60		
	12 " 1¼ " " 20c= 2.40		
	24 " 1 " " 13c= 3.12		
	24 " ¾ " " 09c= 2.16+\$17.28, 65 %	6 05	
	6 No. 1½ Globe valves, @ 3.90=\$23.40		
	6 " 1¼ " 2.80= 16.80		
	12 " 1 " 1.80= 21.60		
	12 " ¾ " 1.35= 16.20		
	12 " ½ " 1.00= 12.00		
	12 " ⅜ " 75= 9.00		
	6 " ¼ " 60= 3.60		
	\$102.60, 65 %	35 91	
	6 ¾ x ½ red coupling.		
	6 1 x ¾ "		
	6 1¼ x 1 "		
	6 1½ x 1¼ "		
	6 2 x 1½ " =25½ lbs., @ 13c=\$3.32, 25 %	2 49	
	1 3x14 radiator, no top, 42 tubes, @ 31c	13 02	

ORDINARY REPAIRS—Continued.

Date.	To whom paid.	Amount.	Total.
1887.	Worswick Manufacturing Co.—Continued.		
Feb. 9	For 592 ft., No. $\frac{3}{4}$ black pipe, @ 6c=\$35.52, 35 %...	\$23 09	
	544 " " 1 " 8c= 43.52, 35 %...	28 29	
	8 lbs. B. fitting, mall., @ 9c.....	72	
		\$120 73	
	Credit by 4 lbs. B. fitting, 52c, 25 %.....	39	
			\$120 34
	Bell, Cartright & Co.—		
	For lumber as follows :		
19	650 ft. 1 $\frac{1}{4}$, 3 clear dressed 2 S., @ 43c.....	\$27 95	
25	384 ft. 12—2x12—16 ;		
	96 " 4—2x12—12 ;		
	213 " 20—2x 4—16+ =693 ft., @ \$15.00	10 40	
	500 " D. common, 16, 16.00	8 00	
Mar. 7	1 M best laths.....	2 40	
			48 75
	Richard Braund—		
15	For labor of man and team, 16 days, @ \$4.00		64 00
	Wm. P. Braund—		
	For repairing truck-wagon, as follows :		
15	1 set of wheels, axle and tire.....	\$90 00	
	4 new leaves and setting up springs.....	5 75	
	repairing front gear.....	2 50	
	painting.....	22 00	
			120 25
	Brush, Moore & Co.—		
Feb. 19	For 24 casters for laundry buggies, @ 43c.....		10 32
	William Carroll—		
Mar. 14	For 5 days' labor on main sewer, @ \$1.50.....		7 50
	Harvey Green—		
15	For 4 day's carpenter work, @ \$2.12 $\frac{1}{2}$		8 50
	William Hitchcock—		
4	For 5 days' labor on main sewer, \$1.50.....		7 50
	E. Hymrod—		
Dec. 20	For 1 day's time repairing roof	\$3 00	
	1 sheet, 20x28, M F. tin.....	15	
	1 lb. solder.....	17	
			3 32
	Lake Shore Foundry—		
Feb. 23	For 2 6-flanged pipe, 146 lbs., @ 3c.....		4 38
	Martin & Barriss—		
Mar. 9	For 5,000 feet $\frac{5}{8}$ clear oak flooring, @ 4c.....	\$200 00	
	109 " $\frac{5}{8}$ wide ash "	4 36	
	87 " $3\frac{1}{2}$ " "	3 48	
	514 " $\frac{4}{4}$ " "	20 56	
	209 " $\frac{3}{4}$ " "	8 36	
	planing 917 feet ash, @ 2c	1 84	
	cartage of ash.....	1 50	
			240 10
	Palmer & De Mooy—		
Feb. 23	For 237 lbs. iron casting for gas-house, @ 3c.	\$7 11	
26	24 " " laundry, "	72	
Mar. 1	24 " " " "	72	
3	212 " " " "	6 36	
			14 91
	John Wherritt—		
15	For 1 month's carpenter work		40 00
	Richard Woodley—		
10	For 3 days' labor plastering wards, @ \$3.50		10 50

ORDINARY REPAIRS—Continued.

Date.	To whom paid.	Amount.	Total.
1887.	Bell, Cartright & Co.—		
	For lumber as follows:		
Mar. 23	350 feet 2½-in. beaded Norway ceiling, @ \$30..	\$10 50	
	22 " 1—4x4—16 dressed 4 sides, 25..	55	
	192 " 12—4x4—12 " 20..	3 84	
			\$14 89
	William Bingham & Co.—		
10	For ¾ gro. 1,089 No. 16 coat and hat hooks, @ \$4.50	\$3 38	
	2 gro. 1 lb. 10 screws, @ 20c.....	40	
29	½ dozen No. 3,287 socket sash pulls, @ \$1.00..	50	
	1½ " socket sash pull plates, No. 3282, @ 25c.	38	
	¼ " pr. 12x17 Jap'd brackets, @ \$5.00.....	1 25	
	⅝ lb. ⅝ brass tubing, 50c.....	31	
	⅞ lb. ¼ " 30c	26	
April 8	2 night-latch keys blank, 12½c.....	25	
14	3 lbs. Jessop steel, 16c.....	48	
		\$7 21	
	Credit by brazed tubes returned.....	55	
			6 66
	W. P. Braund—		
	For blacksmithing as follows:		
Feb. 14	repairing neckyoke	\$ 15	
22	10 bolts for boilers, @ 25c	2 50	
	repairing neckyoke	30	
	steeling and sharpening 2 picks, @ 25c.....	40	
Mar. 1	sharpening 1 pick.....	10	
2	160 lbs. iron for main sewer, @ 8c..	12 80	
7	repairing 1 grubb hoe	25	
	sharpening 3 grubb hoes, @ 15c.....	45	
	steeling 2 picks, 4 ends, 75c.....	1 50	
	sharpening 2 picks, 4 ends, 10c.....	20	
	7¼ lbs. casteel wedges	1 81	
	1 hasp and 2 staples for butcher shop.....	40	
11	repairing wagon seat.....	30	
16	1 day's work at shop	2 00	
	8 irons for refrigerator, @ 12½c.....	1 00	
	1 new rake for green-house.....	1 25	
19	sharpening 2 bars, @ 10c	20	
22	1 eavener ironing	1 25	
25	1 whiffletree ironing	65	
	8 screw irons for fences	1 00	
30	setting 2 horse shoes and 2 new shoes.....	1 20	
April 4	1 iron and bolt for spring wagon.....	25	
	repairing 1 iron bar	15	
			30 11
	Cleveland Paper Co.—		
Mar. 30	For 1 roll red rosin sized paper, 81 lbs., @ 3c.....	.....	2 43
	Cleveland Steam Boiler Works—		
April 4	For 2 men, 10 hrs. each, repairing boilers, @ 35c..	\$7 00	
	car fare to and from asylum	20	
			7 20
	R. T. Lyon—		
Mar. 3	For 1 barrel Portland cement	\$3 00	
	12 barrels Akron cement, @ 80c	9 60	
			12 60
	Ohio Rubber & Belting Co.—		
5	For 6½ lbs. ⅝ □ duck packing, @ 40c	\$2 60	
8	1 dozen anti-rattlers	20	
10	12⅞ 2½ gates, single belt, @ 27c.—\$3.42, 40% and 5% discount.....	1 95	

ORDINARY REPAIRS—Continued.

Date.	To whom paid.	Amount.	Total.
1887. Mar. 30	Ohio Rubber & Belting Co.—Continued. 12½ ft. 4-in. double gates belt, @ 90c=\$19.35, 40% and 5% discount	\$11 03	\$15 78
10	Palmer & De Mooy— For 107 lbs. iron casting, @ 3c.....	\$3 21	
17	5 " " for Eng's chuck, @ 3c...	15	
22	41 " " for laundry, 3c...	1 23	4 59
Feb. 12	George Sharp— For 10 loads furnace slag, @ \$1.00.....	\$10 00	
14	7 " " "	7 00	
	2 " " "	2 00	19 00
Mar. 30	Henry Shatto— For 11 pieces stone boat plank, 20x10—8, 149 ft., @ \$37.00 per M		5 51
Jan. 29	A. Waldeck— For repairing 1 strap punch	\$ 65	
Feb. 21	" 13 old locks.....	4 55	5 20
Apr. 15	John Wherritt— For 1 month's carpenter work		40 00
Feb. 23	Worswick Manufacturing Co.— For 12 ¾x3 bolts, @ 6c.....	\$ 72	
	12 ½x3 " 5c.....	60	
Mar. 14	5 lbs. 1-in.x¾ caps, @ 13c=65c., 25%.....	49	
	4 lbs. ¾ brass pipe, I. P. S., @ 32c	1 28	
	3 lbs. ¼ " " 36c.....	1 08	
April 8	3½ lbs. 1½ mall. coons, @ 13c=42, 25%.....	32	
	6—1½ plugs, @ 13c=78c, 65 %.....	27	\$4 76
Feb. 26	Peter Young— For 1 new dash complete for R. A. wagon.....	\$5 00	
	1 " spring for red spring-wagon.....	2 50	7 50
April 16	Bell, Cartright & Co.— For lumber as follows : 72 feet 2—6x6—12 ; 96 " 4—4x6—12 ; 64 " 2—4x6—16 ; 54 " 1—6x6—18 ; 96 " 12—2x4—12=382 feet, @ \$15.00.....	\$5 73	
27	168 " uppers, 1½ ripped into 7, 1½x12x6, @ \$50	8 40	
	535 " 1½ " Dr. 2 sides, ripped into 20—1½ x14, @ \$50.....	26 75	40 88
May 15	John Wherritt— For one months' carpenter work.....		40 00
April 19	William Bingham & Co.— For ⅓ dozen No. 1 S. S. drills, @ \$2.35=78c. ⅓ " 10 " 2.25=75c. ⅓ " 14 " 2.10=70c. ⅓ " 21 " 1.75=58c. \$2.81 40 % and 10 % discount..... 1.29.....	\$1 52	
	⅓ dozen No.11 Rathery flat bast.files, @ \$3.90...	1 95	
	⅓ " 12 hf. rd. files, 5.45...	2 73	

ORDINARY REPAIRS—Continued.

Date.	To whom paid.	Amount.	Total.
1887.	William Bingham & Co.—Continued.		
April 19	For $\frac{1}{2}$ dozen No. 12 mill files, @ \$3.78...	\$1 89	
	$\frac{1}{3}$ " 4 " " 1.26...	42	
	$\frac{1}{3}$ " 12 sq. " 4.70...	1 57	
	$\frac{1}{3}$ " 12 rd. " 3.78...	1 26	
	$\frac{1}{3}$ " 10 rd. " 2.66...	89	
	$\frac{1}{3}$ " 7 rd. " 1.79...	59	
May 1 1887	47 pounds pigs zinc, " 5 $\frac{1}{2}$...	2 59	
			\$15 41
	Richard Braund—		
15	For labor of man and team, 15 days, @ \$4.00.....		60 00
	George G. Hickon—		
4	For 483 yards green turf, @ 3c.....		14 49
	Elliott Hymrod—		
	For repairing conductor pipes as follows:		
April 12	$\frac{1}{2}$ day's tinsmithing, @ \$3.50.....	\$1 75	
	$\frac{1}{2}$ " " helper, @ \$1.50.....	75	
	28 pounds zinc, @ 6c.....	1 68	
	5 days' tinsmithing, @ \$3 50.....	17 50	
	5 " " 2.50.....	12 50	
	17 pounds solder, .17.....	2 89	
	4 sheets, 14x31 XXX tin, @ 20c.....	80	
	11 " 14x20 M. F. " 10c.....	1 10	
			38 97
	Martin & Barriss—		
Mar. 9	For 71 feet $\frac{4}{4}$ black walnut, @ 20c.....	\$14 20	
	91 " $\frac{6}{4}$ " 15c.....	13 65	
	planing 162 feet walnut, 2c.....	32	
	cartage on walunt.....	50	
			28 67
	R. Mitchell & Sons—		
May 3	For 100 feet 4-in. sewer pipe.....	\$9 00	
	3, 4x4 Ys, @ 45c.....	1 35	
	2, 4x4 hand-hole traps, @ \$1.00.....	2 00	
	3 4-in. elbows, 37 $\frac{1}{2}$	1 13	
			13 48
	William Sailsbury—		
15	For 9 days' labor.....		12 15
	Peter Young—		
14	For repairing vehicles as follows:		
	1 reach in phaeton.....	\$1 50	
	repairing irons.....	1 50	
	putting new bolts in gear.....	50	
	repairing shafts.....	1 25	
	new king bolt.....	80	
	new curtains and repairing.....	4 50	
	fringe in top.....	50	
	straps on shafts.....	30	
	painting gear, touching-up and varnishing body ..	8 00	
	repairing king bolt on wagon.....	50	
	tightening bolts on gear.....	75	
	one new box and setting.....	75	
	straps on whiffletree.....	25	
	touching-up and varnishing piano box buggy	6 00	
			27 10
	Bell, Cartright & Co.—		
	For lumber, as follows:		
26	85 ft. 8—2x4—16, Dr. 4 sides, @ \$25.00.....	\$2 12	

ORDINARY REPAIRS—Continued.

Date.	To whom paid.	Amount.	Total.
1887.	Bell, Cartright & Co.—Continued.		
June 4	For lumber, as follows: 171 feet, 2—8 x 8—16; 96 " 2—3 x 12—16; 43 " 2—4 x 4—16 = 310 feet, @ \$16.00 ...	\$4 96	\$7 08
15	Richard Braund— For labor of man and team 30 days, @ \$4.00 Credit by 370 old pickets sold, @ 2c.....	120 00 7 40	112 60
	William P. Braund— For blacksmithing, as follows :		
April 22	1 furnace hoe	\$ 35	
23	8 angle irons, @ 10c.....	80	
31	2 braces and 6 bolts for handbarrow	50	
May 2	1 spring for truck-wagon	4 75	
4	1 link in chain.....	10	
5	4 horseshoes, @ 40c	1 60	
9	1 new sod-cutter.....	1 25	
12	5 screw eyes.....	63	
13	$\frac{1}{2}$ day's work at shop, @ \$2.00	1 00	
20	7 bolts, and 7 plates for washer.....	1 25	
23	repairing plow-cutter	50	
	caststeel drill.....	75	
	2 whiffletrees for cultivator, @ \$1.12 $\frac{1}{2}$	2 25	
	9 bolts and 8 plates for washers.....	1 35	
June 6	1 iron for dumb waiter.....	1 25	
	1 rake for gas-house	1 00	
	repairing top on truck.....	50	
9	3 hours' work at shop, @ 20c.....	60	
	1 iron for dumb waiter.....	1 25	
	2 $\frac{1}{2}$ hours' work at shop, @ 20c	50	
	repairing drag	50	
			22 68
	Cleveland Steam Boiler Works—		
2	For 1 can varnish, 2 gallons, @ 75c.....	\$1 50	
13	1 tank, 30-inch diam., 40-inch le'ght., $\frac{3}{16}$ iron and $\frac{5}{16}$	28 00	
	M. A. Corbett—		29 50
15	For 11 $\frac{6}{16}$ days' labor, @ \$1.50.....		17 47
	Patrick Hanley—		
6	For 11 days' labor, @ \$1.50		16 50
	William Heisler—		
May 24	For 2 days' labor, @ \$1.50		3 00
	Elliott Hymrod—		
	For repairing roof, as follows:		
June 15	5 days' tinsmithing, 2 men, @ \$3.00	\$30 00	
	8 hours' tinsmithing, @ 60c.....	4 80	
	85 lbs. No. 5 galvanized iron pipe, @ 15c	12 75	
	1 doz. " 5 " cond. hooks	50	
			48 05
	Lake Shore Foundry—		
13	For 315 lbs. castings, @ 3c	\$9 45	9 45
	Taylor & Boggis Foundry Co.—		
May 14	For 171 lbs. plain casting, @ 3 $\frac{1}{2}$ c	5 99	
	4 $\frac{1}{2}$ " machinery casting, @ 3 $\frac{1}{2}$ c.....	15	
			6 14
	McIntoch, Good & Huntington—		
	For screws and nails, as follows:		
20	6 packages 1 $\frac{1}{2}$ 15 wire brads, @ 7 $\frac{1}{2}$ c.....	\$ 45	
	6 " 1 $\frac{3}{4}$ 14 " 7c.....	42	

ORDINARY REPAIRS—Continued.

Date.	To whom paid.	Amount.	Total.
1887.	McIntosh, Good & Huntington—Continued.		
	For screws and nails, as follows:		
May 20	6 packages 2 13 wire brads, @ 6½c	\$ 39	
	6 " 2½ 12 " 6c.....	36	
	4 " 1¼ 16 " 8c.....	32	
	2 " 1 18 " 11c.....	22	
	2 lbs. ¾ clout nails, brads, 12c.....	24	
	2 " 1 " " 10c.....	20	
	2 packages ¾ 17 wire brads, 11½c.....	23	
	2 lbs. 1¼ clout nails, 8c.....	16	
	2 " 1½ " 8c	16	
	100 lbs. 22 D. nails, steel casing.....	2 95	
	100 " 8 D., common, steel casing nails.....	3 10	
	6 gross 1½ 10 screws, @ \$.86=\$5.16		
	6 " 1½ 12 " 1.02= 6.12		
	6 " 1½ 14 " 1.24= 7.44		
	6 " 1¾ 10 " .97= 5.82		
	6 " 1¾ 12 " 1.15= 6.90		
	6 " 1¾ 14 " 1.40= 8.40		
	6 " 2 15 " 1.69=10.14		
	\$49.98		
	Less 75 % discount..... 37.49	12 49	
April 22	Mitchell Brothers—		\$21 69
	For ½ C. ¼x2½ carriage bolts, @ \$2.10=\$1.05		
	½ " ¼x3 " 2.20= 1.10		
	½ " ¼x3½ " 2.30= 1.15		
	\$3.30		
	Less 60 %..... 1.32		
	" 10 %..... 13	\$1 19	
May 23	For 1¼ lbs. ½-inch rope, @ 12½c	16	
May 7	1 keg 6 D. nails	2 40	
May 16	1 6x4 Y. branch, @\$1.35, 50 %.....	68	
May 17	3 pair 4½x4½ butts.....	45	
May 25	1 dozen 2-inch frame pulleys	35	
June 6	3 gross 2¼ No. 15 screws, @ 70c	2 10	
			7 33
May 20	Henry Shatto—		
	For 2 white oak posts, 10x10-in.x10 ft., 200 ft.,@\$25		2 00
May 18	E. W. Tyler—		
	For 1 keg 20 D. wire nails	\$3 50	
	163 lbs. 20 D. steel wire nails, @3½c	5 71	
			9 21
June 15	John Wherritt—		
	For one month's carpenter work.....		\$40 00
Apr. 27	Worswick Manufacturing Co.—		
May 10	For 6¾ lbs. red metal, @ 25c	\$1 69	
	6 1½x1¼x¾ C. I. tees, @ 44c.= \$2.64		
	2 1¼ service cocks, \$2.20c.= 4.40		
	\$7.04		
	65% discount..... 4.58		
		2 46	
June 13	1¾ lbs. 2½ lock nuts, @ 13c.= .23		
	4½ lbs. 2½x2 red coupl'g,@ 13.= .59		
	.82, 25%	62	

ORDINARY REPAIRS—Continued.

Date.	To whom paid.	Amount.	Total.
1887. June 2	Geo. Worthington & Co.— For 4 doz. No. 20 door knobs, @ \$1.06 12 pair 15 10x12 brackets..... $\frac{1}{6}$ gross drawer pulls, @ \$3.85	\$4 24 3 00 64	\$7 88
15	Harvy Green— For 16 $\frac{3}{4}$ days' carpenter work, @ \$2.12 $\frac{1}{2}$ Cr. by 650 old pickets sold to D.Griffeth,@2c	\$35 59 13 00	22 59
30	Fred. Adee & Co.— For repairing 7 $\frac{3}{4}$ -in. Jane I. C. bibbs, @ \$1.00..... " 22 $\frac{1}{2}$ -in. " " 75c..... 1 keg containing bibbs	\$7 00 16 50 10	23 60
23	Bell, Cartright & Co.— For lumber, as follows : 1,000 feet 1-in. sel. common dressed, 2 sides... 750 " 1 $\frac{1}{2}$ -in. box dressed, 2 sides, @ \$42.. 1,000 " 1 " 2 " 41.. 625 " 1 $\frac{1}{4}$ " 2 " 42.. 1,000 " 2 " 2 " 43.. 1,000 " D. common 16, 17.. 267 " 25—2x4—16; 192 " 12—2x6—16; 384 " 12—2x12—16=843 ft., @ \$15.00	\$33 00 31 50 41 00 26 25 43 00 17 00 12 64	
27	1,000 " common flooring, @ \$25.00..... 1 $\frac{1}{4}$ M XXX lath, @ \$4.15.....	25 00 5 20	
July 6	853 feet 80—2x4—16, @ \$15.00.....	12 80	
7	168 " 7—2x6—16 16.00.....	2 69	
13	1,680 " 40—3x12—18 16.00..... 256 " 12—4x4—14 16.00..... 213 " 20—2x4—16 15.00..... 144 " 4—6x6—18 16.00..... 192 " 12—2x6—16; 256 " 12—2x8—16; 384 " 12—2x12—16=832 ft., @ \$15.00	26 88 4 10 3 20 2 30 12 48	259 04
June 1	Wm. Bingham & Co.— For $\frac{7}{16}$ lb. copper wire, @ 25c.....	\$ 12	
21	9 lbs. 2 $\frac{1}{2}$ x $\frac{1}{2}$ cast steel, @ 16c..... 18 $\frac{1}{4}$ lbs. copper wire, @ 30c.= \$5.48, 30% 1 lb. copper burs.....	1 44 3 84 32	5 72
	W. P. Braund— For blacksmithing, as follows: 4 horse shoes, @ 40c handle for grinding stone repairing bolts for bridge 1 small iron for dumb waiter..... repairing post-hole digger setting 4 tire on spring wagon " 4 " truck wagon.....	\$1 60 25 80 10 50 2 00 2 00	
July 15	John Brooks— For 25 days' carpenter work, @ \$2.50		7 25 62 50
13	David Brown— For repairing roofs, as follows : 1 man's labor, 14 days, @ \$2.50 1 " " 2.00 6 lbs. galvanized steel nails, @ 09c.....	\$35 00 28 00 54	63 54

ORDINARY REPAIRS—Continued.

Date.	To whom paid.	Amount.	Total.
1887.	Wm. H. Caine—		
	For repairing walks, as follows :		
July 12	12 loads stone, @ \$1.50	\$18 00	
	2 " (asylum team), @ \$1.00..	2 00	
	1 flag, 3 ft.x3 ft	1 25	
June 17	1 " 5 ft.x6½ ft, for butcher shop	6 50	
	labor of stone cutter, 3½ days, @ \$4.00.....	14 00	
	laborer, ¾ day, @ \$1.75	1 31	
			\$43 06
	Cleveland Rubber Co.—		
May 26	For covering shaft with rubber, 22, @ \$1.00.....	\$22 00	
June 15	recovering mangle roll, 6¼-in. dia., 16, @ \$1.00	16 00	
			38 00
	Harvy Green—		
July 15	For 24½ days' carpenter work, @ \$2.25.....		55 12
	Elliott Hymrod—		
	For repairing roof, as follows :		
14	labor of tinsmith, 19 ⁸ / ₁₀ days', @ \$3.50.....	\$69 30	
	" " 2.50.....	49 50	
	18 lbs. solder, @ 15c.....	2 70	
	105 lbs. galvanized iron pipe, 5-in., @ 15c.....	15 75	
	4 boxes 14x20 M. F. tin, @ \$7.50	29 00	
	2 doz. No. 5 galvanized cond. hooks, @ 50c ...	1 00	
	5 lbs. barrel nails, @ 7c.....	35	
	5 lbs. red paint, 3c.....	15	
	3 galls. linseed oil, 40c	1 20	
			168 95
	Mitchell Brothers—		
June 22	For 99 lbs. German cake glue, @ 20c.....	\$19 80	
23	3 prs. 4½x4½ L. P. wrot. butts, @ 15c.....	45	
27	46 ft. 8-in. sewer-pipe, @ 45c=\$21.70, 55%....	9 77	
	1 8-in. curve, @ \$1.80, 55 %.....	81	
July 6	50 ½x7½ carriage bolts	1 46	
	2 doz. lag. screws, ½x7, @ 48c	96	
	3¾ lbs. ½-in. washers.....	30	
	1 keg 40 ^d nails.....	2 25	
	1½ doz. 4½x4½ L. P. W. butts, @ \$1.60.....	2 67	
13	2—2 pint oil cans, @ 25c.....	50	
	Palmer & Kumler—		38 97
	For covering and repairing wagonette as follows:		
June 28	one-half view.....	\$ 75	
	setting 4 tires, @ 50c.....	2 00	
	iron for holding step and repairing circle....	1 00	
	painting gear and varnishing body.....	12 00	
	new top and curtains.....	50 00	
			65 75
	Vial Sailsbury—		
July 15	For 25 days' carpenter work, @ \$2.50.....		62 50
	J. B. Schroder & Co.—		
2	For 12 ward locks as per sample sent.....	\$15 00	
	6 " " " "	7 50	
	6 ward male locks, @ \$1.50.....	9 00	
	6 " female locks, 1.50.....	9 00	
	24 escutcheons, .10.....	2 40	
			42 90
	Sturtevant Lumber Co.—		
April 15	For 4,000 feet 1½-in. x 1¾-in. oak molding as per sample sent, @ \$22.50 per M.....	\$90 00	
	cartage on same to asylum.....	1 00	
			91 00

ORDINARY REPAIRS—Continued.

Date.	To whom paid.	Amount.	Total.
1887.	E. W. Tyler—		
June 16	For 1 keg 10 ^d nails, steel.....	\$2 25	
	1 " 10 ^d steel wire nails.....	3 50	
27	52 lbs. galv. iron No. 20, cut to size, @ 8c.....	4 16	
	1 keg 4 ^d wire nails.....	4 60	
			\$14 51
July 15	John Wherritt—		
	For one month's carpenter work.....		40 00
June 24	Worswick Manufacturing Co.—		
	For 6—2x1½x1½ G. B. tees, @ 70c= \$4.20		
	6—1½x1¼x1¼ " 44c= 2.64		
	6—1¼x1x1 " 35c= 2.10		
	6—1x¾x¾ " 23c= 1.38		
		\$10.32	
	65 % discount.....	6.71	
		\$3 61	
29	50—¾ bars. washers, @ \$1.60 per hundred....	80	
	50—½ " 1.40	70	
July 14	2—3x20 radiator iron tips, 120 tubes, @ 30c per tube.....	36 00	
			41 11
	George Worthington & Co.—		
1	For 1 box 14x20 C. M. tin.....	\$7 25	
5	40 lbs. half and half solder, @ 15½c.....	6 20	
9	1 box 14x20 M. F. tin.....	7 25	
			20 70
May 25	Peter Young—		
	For repairing vehicles as follows :		
	new main leaf in spring-wagon and painting springs.....	\$2 00	
	repairing whiffletree.....	50	
	setting 1 tire.....	50	
	painting whiffletree.....	1 25	
	setting 4 tires, @ 50c.....	2 00	
	new bolts and tightening chips.....	50	
	setting 1 tire.....	50	
			7 25
Aug. 10	William Armour—		
	For 6½ days' painting gutters, valleys and ridges of roofs, @ \$2.00.....		13 00
July 18	Bell, Cartright & Co.—		
	For lumber as follows :		
23	1 M XXX S. S. shingles.....	\$4 25	
29	1,200 best lath.....	2 88	
Aug. 12	384 feet 16—2x12—12, @ \$15.00.....	5 76	
	72 " 9—2x4x—12, dr. 4 sides, @ \$25.00...	1 80	
			14 69
July 21	Wm. Bingham & Co.—		
23	For 11½ lbs. galv. slate nails, @ 7c.....	\$ 81	
29	16 lbs. 1-in. hf. rd. iron, 3c.....	48	
Aug. 12	3 yards impr. tracing cloth, 42-in., @ 40c.....	1 20	
	1—2½ Jenkin's globe-valve.....	7 10	
	⅓ doz. ⅝x2 set screws, @ 36c.....	12	
	⅓ " ⅝x2½ " 41c.....	14	
			9 85
15	Charles Bishop—		
	For labor of man and team, 7½ days, @ \$4.00.....		30 00

ORDINARY REPAIRS—Continued.

Date.	To whom paid.	Amount.	Total.
1887.	Richard Braund—		
July 30	For labor of man and team, 15½ days, @ \$4.00.....	\$62 00	
Aug. 15	labor " " 7½ " 4.00.....	30 00	
			\$92 00
	Samuel Braund—		
3	For labor of man and team, 7 days, @ \$4.00....	.....	28 00
	David Drown—		
12	For labor slating roofs, 10¼ days, @ \$2.00.....	\$20 50	
	" " 10¼ " 2.50.....	25 62	
			46 12
	George G. Hickox—		
July —	For 430 square yards green sod, @ 3c.....	.....	12 90
	Elliott Hymrod—		
Aug. 11	For repairing conductor pipes as follows:		
	9¾ days' tinsmithing, @ \$3.50.....	\$34 12	
	9¾ " " 2.50.....	24 37	
	64 lbs. galv. iron conductor pipes, @ 15c.....	9 60	
			68 09
	Iron Clad Paint Co.—		
July 26	For 500 lbs. rosin, red, No. 1 paint, @ 1½c.....	.....	7 50
	Vial Sailsbury—		
Aug. 15	For 7 days' carpenter work, @ \$2.50.....	.....	17 50
	Strong, Carlisle & Turney—		
June 29	For 1— $\frac{1}{8}$ hand tap, @ \$2.00; 40 %.....	\$1 20	
July 25	1— $\frac{3}{8}$ taper shank drill	40	
	1— $\frac{7}{16}$ " "	45	
	1— $\frac{1}{2}$ " "	50	
	1— $\frac{9}{16}$ " "	60	
	1— $\frac{5}{8}$ " "	70	
	1— $\frac{11}{16}$ " "	80	
Aug. 5	1—6 ft. x 28-in. sand screen.....	3 50	
			8 15
	Charles Walker—		
15	For labor of man and team 1 day.....	.....	4 00
	George Worthington & Co.—		
July 20	For 1 box, 14x20 M. F. tin.....	\$7 25	
	25 lbs. half and half solder, @ 15½c.....	3 88	
25	1 lb. copper wire.....	25	
			11 38
	Wright & Knauff—		
Aug. 5	For 500 fire-brick, @ \$30 per M.....	\$15 00	
	1 ton fire-clay.....	3 00	
	100 diamond squares, @ \$30 per M.....	3 00	
			21 00
	Richard Woodley—		
Mar. 17	For 1 day's labor plastering wards.....	\$3 50	
Aug. 15	2 days' " " @ \$3.50.....	7 00	
	2 " plasterer tender, 1.75.....	3 50	
	3¾ " plastering rear build'g 3.50.....	13 13	
	3 " mason work setting retorts.....	10 50	
	3 " tender, @ \$1.75.....	5 25	
			42 88
	Worswick Manufacturing Co.—		
July 19	For 4¾ lbs. red metal castings, @ 25c	\$1 19	
	3 $\frac{5}{8}$ Stebbins' hose bibbs, J. P. comp., @ \$6; 50%	3 00	
	36 closet stems and center pieces.....	12 97	
	6 2-inch hose caps.....	3 50	

ORDINARY REPAIRS—Continued.

Date.	To whom paid.	Amount.	Total.
1887. July 25	Worswick Manufacturing Co.—Continued. For 2 $\frac{5}{8}$ x12 gauge glasses, @ \$ 15... 2 $\frac{3}{4}$ x16 " " " " @ 20...	\$ 30 40	
Aug. 2	1 1-inch L. H. hose bibb J. P., @ 42c= 3.50 60 % discount.. 2.10	1 40	
4	1 1 lb. L. H. hose bibb J. P., @ 42c=\$3.50 60 % discount..... 2.10	1 40	
12	2 $2\frac{1}{2}$ x1 tees, @ \$1.25=\$2.50 2 $2\frac{1}{2}$ x1x2½ tees, 1.25= 2.50 \$5.00 65 % discount.. 3.25	1 75	
Sept. 24	Bell, Cartright & Co.— For 6 window sash, 6x18, 2 lts. 1¼, @ \$1.25	\$7 50	\$25 91
• Sept. 2	288 feet 12—2x12—12; 384 " 12—2x12—16; 128 " 8—2x 6—16 =800 feet, @ \$16.00 ... 20 " 5—1x 3—16 Dr. 2 S., 20.00 ...	12 80 40	20 70
Aug. 1	W. P. Braund— For blacksmithing, as follows: 1 wrench	\$1 00	
3	1 new wheelbarrow.....	4 50	
8	4 staples and 4 bars.....	40	
10	setting 1 tire and ironing wheelbarrow.....	1 50	
15	steeling 1 pick end and sharpening 3 ends	63	
25	setting 4 tires, @ 50c	2 00	
28	new end board and ironing 2 bolts	1 50	
29	making 24 table braces, @ 10c.....	2 40	
31	3 chisels, @ 25c	75	
	making 100 angle bed irons, @ 12½c.....	12 50	
	1 sand board	1 25	
	making 100 angle bed irons, @ 12½c.....	12 50	
	mending and setting axle.....	2 00	
	2 new clips and repairing wagon	75	
	threading nuts on 14 bolts	1 75	
	whiffletree ironing	1 00	
	1 thill end	50	
	1 wrench	50	
Sept. 5	Cleveland Rolling Mill Co.— For 1 hard steel, 8 lbs., @ 05c.....	\$ 40	
8	6 bushels charcoal, @ 15c.....	90	
	1 barrel ground ganister	1 75	
	1 " containing ganister	25	
July 11	Lake Shore Foundry— For 38 lbs. casting, @ 3c	\$1 14	
	407 lbs. casting, 6 ash pit doors, @ 3c	12 21	
Aug. 17	McIntosh, Good & Huntington— For 1 dozen No. 620 wheelbarrows.....	\$10 50	
18	12 $\frac{5}{8}$ x11 mach. bolts, @ 8c.....	96	
June 18	R. Mitchell & Sons— For 12 feet, 12-in. sewer pipe, @85c=\$10.20, 55 %	\$4 59	
Aug. 5	1 each, $\frac{1}{16}$, $\frac{1}{8}$, $\frac{3}{16}$, $\frac{7}{16}$, $\frac{1}{4}$, $\frac{11}{16}$ snell auger bitts	85	

ORDINARY REPAIRS—Continued.

[illegible]

ORDINARY REPAIRS—Continued.

Date.	To whom paid.	Amount.	Total.
1887. Sept. 19	Auld & Conger— For 5 sqr. 16x24 purple slate, @ \$5.50.....	\$27 50	
	3 " 12x24 " 5.50.....	16 50	
	5 " 14x24 " 5.50.....	27 50	
	2 " 14x24 black slate, 5.00.....	10 00	
			\$81 50
	Bell, Cartright & Co.— For lumber, as follows:		
16	73 feet 1½ uppers, @ \$.50.....	\$3 65	
	70 " 5—1x12—14, .33.....	2 31	
28	452 " 7—3x12—22, 18.00.....	8 14	
	168 " 4—4x6, 17.00.....	2 86	
	500 " ½-in. pannel, 40.00.....	20 00	
Aug. 12	1,000 " D. common	18 00	
			54 96
	Wm. Bingham & Co.— For 10 lbs. 1½ gert. slating nails, @ 9c.....	\$ 90	
18	20 lbs. 1½ tinned roof " 8c.....	1 60	
Sept. 16	2 bars 1½ sqr. iron, 118 lbs., \$2.10.....	2 48	
	2¾ lbs. 4x½ steel, @ 16c.....	44	
	11½ lbs. ⅝ oct. steel, @ 16c.....	1 84	
	Samuel Braund— For labor of man and team, 8 days, @ \$4.00		7 26
Oct. 15			32 00
	John Brooks— For 11 days' carpenter work, @ \$2.50		27 50
	Thomas Burden— For labor of man and team, 8 days, @ \$4.00	\$32 00	
	1 load building stone	2 50	
	283 feet block stone, @ 10c.....	28 30	
	8 step stones, @ 50c.....	4 00	
	40 feet 8-in Ashler stone, @ 8c	3 20	
			70 00
	W. H. Caine— For 21 feet curbing	\$2 63	
1	2 days' labor of quarryman, @ \$2.25	4 50	
	10 feet flagging	1 25	
		\$8 38	
	Credit by 6 loads, @ 25c	1 50	
	Cleveland Steam Boiler Works— For 2 men, 8 hrs. each, repairing boilers, @ 35c...	\$5 60	6 88
Sept. 24	Car fare to and from asylum	20	
			5 80

ORDINARY REPAIRS—Continued.

Employes' Pay-Roll on burned Building, etc.

Name.	Occupation.	Number of days.	Pay per day.	Amount.	Total.
John Brooks.....	Carpenter	18 $\frac{1}{4}$	\$2 75	\$50 18	
Vial Sailsbury	"	7 $\frac{1}{4}$	2 50	18 12	
Alsom Sailsbury	"	15 $\frac{1}{4}$	2 50	22 87	
Harvey Green.....	"	14 $\frac{1}{2}$	2 50	35 62	
Jere Burkett.....	"	13 $\frac{1}{4}$	2 50	33 12	
Fred. Skeel.....	"	29 $\frac{3}{4}$	2 50	74 37	
Williard Prentiss	"	12 $\frac{1}{20}$	2 50	30 13	
Frank Stoneman.....	"	12 $\frac{1}{20}$	2 50	30 13	
William Ward.....	"	8 $\frac{1}{5}$	2 50	22 00	
Thos. Cash	"	10 $\frac{1}{2}$	2 50	26 25	
John Foster	Laborer	15	1 50	22 50	
Hezekiah Fern.....	"	14 $\frac{7}{10}$	1 50	22 12	
Mike Burns	"	15	1 50	22 50	
John Boyd	"	14	1 50	21 00	
John Sanderson.....	"	13	1 75	23 19	
Mike Reddy	"	8 $\frac{7}{10}$	1 50	13 05	
Arthur Baldwin.....	"	11	1 75	19 25	
Freeman Brooks	"	12	1 50	18 00	
Frank Snell.....	"	13	1 75	22 50	
Mike McGinley.....	"	3 $\frac{1}{3}$	1 50	5 00	
Milo Corbitt	"	12 $\frac{1}{2}$	1 50	18 75	
James Knight	"	12 $\frac{3}{4}$	1 75	22 32	
Andrew Hiffler	"	12	1 50	18 00	
Harry Grantham	"	10 $\frac{1}{4}$	1 50	15 38	
John Kelley	"	10	1 50	15 00	
Henry Mills	"	9 $\frac{1}{4}$	1 50	13 88	
Peter Shiffler	"	3	1 50	4 50	
Wm. Millward.....	"	12	1 50	18 00	
John E. Park	Pipe-fitter	16	2 00	32 00	
Edward Lace	"	17	2 00	34 00	
John Bray.....	"	10	2 50	25 00	
Albert Voorheese.....	assistant... ..	17 $\frac{1}{4}$	1 75	30 18	
Rich'd Woodley	Bricklayer.....	6	3 50	21 00	
Jesse Charlton.....	"	5	3 50	17 50	
Wm. James	"	6	3 50	21 00	
Henry Downey	helper	6	1 75	10 50	
Wm. Corbeitt.....	Man and team.....	12 $\frac{3}{4}$	3 50	44 62	
Sam. Braund.....	"	11	4 00	44 00	
Thos. Burden.....	"	13	4 00	52 00	
					\$989 53

ORDINARY REPAIRS—Continued.

Date.	To whom paid.	Amount.	Total.
Oct. 1	Edward H. Foster— For 1 closet, complete, N. P. C. and P. bowl..... 1 flat anemd. urinal..... 1 No. 8 Doherty urinal cock.....	\$5 00 4 14 3 00	
		\$12 14 4 00	
	Credit by 1 H. L. closet returned.....	4 00	\$8 14
6	Harvy Green— For 2 days' carpenter work, @ \$2.25.....		4 50
15	George Hill— For labor of man and team, 6 days, @ \$4.00.....		24 00
10	Ohio Rubber and Belting Co.— For 14 gas jets, 11½ lbs., @ 40c.....		4 50
Sept. 29	Vial Sailsbury— For 11 days' carpenter work, @ \$2.50.....		27 50
21	Sheets Brothers— For 3 sacks—1 barrel Akron cement..... 2 barrels Akron cement.....	\$3 15 2 10	3 15
Oct. 15	Taylor-Boggis Foundry Co.— For 2 pieces furnace castings, 193 pounds. 4 strips for same..... 48 "		
	241 lbs., @ 2½c.....		6 03
	John S. Wherrit— For 1 month's carpenter work.....		40 00
Sept. 26	George Worthington & Co.— For 5 set No. 2 shipherd packing, @ 10c..... 6 doz. 1,262 cupd. catchers, 50c.....	\$ 50 3 00	3 50
Oct. 5	E. S. Doolittle— For 32 ¹ / ₁₀ days' mason work, @ \$4.00..... 17 ¹ / ₂ " laborer, 1.50.....	\$128 40 26 25	154 65
1	Worswick Manufacturing Co.— For 6—¾ hose couplings, @ \$2.40=\$1.20, 60 %..... 24—½ C. I. ells, 6= 1.40 10—1¼x1 C. I. ells, 23= 2.30 10—1x¾ " 16= 1.60	\$ 48	
		\$5.34, 65 %.....	\$1 87
	12—⅛ air cocks, @ 40c=\$4.80, 65 %	1 68	
	12—½ Stebbins pl. bibbs, @ \$21.00 6—⅝ " " 12.00		
		\$33.00	
	57½ % discount..... 18 97		
13	2—2x14 radiators, I. T., 56 tubes, @ 36c.....	\$14 03 20 16	38 22
	Total		\$5,926 71

RECEIVED FROM COUNTIES IN ASYLUM DISTRICT FOR CLOTHING FURNISHED PATIENTS
FROM SAID COUNTIES DURING THE FISCAL YEAR ENDING NOVEMBER 15, 1887, AS
FOLLOWS:

Counties.	Date of bills.	Amount.	Total.
Ashtabula	Clothing as per bill of Jan. 15...	\$82 75	
Columbiana	" " " ...	108 30	
Cuyahoga	" " " ...	295 57	
Geauga.....	" " " ...	53 36	
Lake	" " " ...	35 55	
Lorain ..	" " " ...	73 61	
Mahoning	" " " ...	109 20	
Medina	" " " ...	26 50	
Portage	" " " ...	30 41	
Stark.....	" " " ...	138 32	
Summit	" " " ...	75 03	
Trumbull..	" " " ...	156 11	
Wayne	" " " ...	80 57	
Ashtabula	Clothing as per bill of July 22...	102 25	
Columbiana	" " " ...	147 06	
Cuyahoga	" " " ...	356 68	
Geauga	" " " ...	43 90	
Lake	" " " ...	44 52	
Lorain	" " " ...	101 37	
Mahoning	" " " ...	110 76	
Medina	" " " ...	30 60	
Portage	" " " ...	17 64	
Stark.....	" " " ...	150 85	
Summit	" " " ...	91 75	
Trumbull.....	" " " ...	125 16	
Wayne.....	" " " ...	78 71	
			\$2,666 53

SCHEDULE OF BILLS, PAY-ROLLS, ESTIMATES, ETC.,

APPROVED BY THE BOARD OF TRUSTEES AND REMAINING UNPAID AT THE CLOSE OF
BUSINESS ON THE 15TH DAY OF NOVEMBER, 1887.

Date of purchase.	No. of voucher.	Of whom purchased.	Articles.	Amount.
Oct. 11	1	Arnold & Hord.....	Woodware	\$35 20
Nov. 11	2	Thomas Axworthy.....	Steam coal.....	66 86
8	3	E. I. Baldwin, Hatch & Co..	Tablecloths and napkins	91 42
11	4	Benton, Myers & Co.	Drugs and medicine....	99 20
15	5	J. L. Brainard.....	Choir service	100 00
7	6	Brooks & Co.....	Stationery.....	9 95
15	7	Thomas Burden.....	Hauling coal.....	94 03
8	8	R. M. Burrows & Co.....	Potatoes.....	519 44
Oct. 9	9	S. Bigler & Co.....	Flour	187 50
17	10	Buckeye Broom Factory....	Brooms	20 00
21	11	T. W. Burnham.....	Flour	103 75

SCHEDULE OF BILLS, PAY-ROLLS, ESTIMATES, ETC.—Continued.

Date of purchase.	No. of voucher.	Of whom purchased.	Articles.	Amount.
Oct. 19	12	G. A. Budd & Co	Tallow	\$32 96
17	13	Babcock, Hurd & Co.....	Groceries.....	56 43
27	14	Wm. Bingham & Co.....	Hardware	14 95
Nov. 8	15	Brush, Moore & Co	"	21 46
Oct. 17	16	John D. Briggs.....	Coffee and indigo.....	149 21
17	17	L. F. & S. Burgess.....	Sugar	102 28
Nov. 1	18	Calkins & Co	Lime	24 50
7	19	Eli W. Cannell	Cement and flour.....	11 75
7	20	Childs, Groff & Co	Shoes and slippers	87 10
9	21	Cleveland Baking Co.	Crackers	19 93
12	22	Cleveland Provision Co	Hams and sausage	23 37
7	23	Cleveland Paper Co.....	Paper and envelopes....	10 38
3	24	Cleveland Post-office.....	Stamps	10 00
11	25	Chase Brothers	Raspberry bushes	10 00
Oct. 1	26	Cleveland Telephone Co.....	Telephone rent	32 45
Nov. 10	27	T. S. Clymonts	Eggs and grapes	210 22
12	28	John Comer	Repairing shoes.....	12 32
10	29	John H. Davis.....	Bread and fruit	8 92
Oct. 20	30	Geo. B. Deardorff	Apple butter	8 72
Nov. 7	31	Wm. Edwards & Co.....	Syrup and tobacco	185 69
11	32	C. F. Emery.....	Blacksmithing.....	25 50
15	33	Employes' Pay-roll.....	Labor	2,636 02
July 14	34	W. C. Fair.....	Veterinary service.....	15 50
Nov. 11	35	Otis Farrer	Cider and pumpkins	29 43
15	36	Fisher & Hathaway.....	Milk	445 21
Oct. 25	37	Chas. A. Fox	Coffee mill	18 00
Nov. 12	38	James Gibbons & Co.....	Oysters	11 26
Oct. 17	39	Grasselli Chemical Co.....	Soda ash ..	106 96
Nov. 11	40	J. Herig and Son.....	Renovat'g hair mattres's	416 50
11	41	Nicholas Hoeffler	Cider ..	10 15
14	42	S. W. Honywell.....	Apples	85 78
5	43	Otis House	Turnips and squash	124 60
5	44	Frank, Hard & Co.....	Butter.....	476 55
10	45	Elliott Hymrod	Repairing tinware	8 90
Oct. 21	46	Wm. J. Jenks.....	Disinfectant	36 42
Nov. 12	47	A. C. Kendel ..	Apples and grapes	10 80
Oct. 18	48	Kock, Goldsmith & Co	Clothing	29 58
Nov. 14	49	Jacob Kollmann.....	Chickens and eggs.....	37 61
9	50	Wm. Laub	Yeast	6 70
1	51	Wm. Lee	Apples	5 20
Oct. 22	52	Leek, Doering & Co	Dry goods.....	36 85
19	53	Lehman, Richman & Co.....	Clothing	67 69
Nov. 2	54	L. W. Loomis.....	Tinware	129 30
9	55	D. Martin & Co	Dried apples and potat's	1,049 22
12	56	Manufacturers' Coal Co	Lump coal.....	686 76
11	57	Thomas Mighton	Cider jelly.....	70 29
Oct. 22	58	Mitchell & Sons.....	Hardware	13 56
Nov. 14	59	Monson & Sons	Fresh fish	99 21
Oct. 14	60	Morgan, Moore & Baine	Gas coal	42 71
31	61	Ohio Penitentiary	Blankets ..	469 20
Nov. 9	62	W. H. H. Peck & Co.....	Rubber goods	11 70
3	63	Pennsylvania Co.	Freight.....	12 53
Oct. 26	64	Henry B. Platt.....	Disinfectant	24 00
Nov. 10	65	John Pyke	Repairing shoes.....	14 22
12	66	C. A. Rahn.....	Repairing harness	8 65
Oct. 17	67	Rice & Burnett	Crockery	30 18
Nov. 7	68	Root & McBride Bros	Dry-goods.....	311 89
Oct. 26	69	E. M. Rowles	Retur'g escaped patient	9 75

SCHEDULE OF BILLS, PAY-ROLLS, ESTIMATES, ETC.—Continued.

Date of purchase.	No. of voucher.	Of whom purchased.	Articles.	Amount.
Oct. 17	70	Root, Whitelaw & Co.....	Japonica	\$31 33
Nov. 9	71	J. B. Savage	Blank books and stati'ry	156 25
15	72	Gabrial Schaffner.....	Beef and mutton	987 28
Oct. 19	73	F. Schumacher Milling Co..	Avena and flour.....	67 84
Nov. 5	74	Henry Shafer.....	Grapes	12 44
14	75	Sheets Brothers.....	Forage	62 12
11	76	Sherburne & Noonan.....	Livery boarding	7 55
9	77	E. M. Shetler... ..	Cider and apple butter..	16 94
Oct. 28	78	Stephens & Widlar	Tea.. ..	107 19
26	79	Smith & Curtis	Coffee, must'd and pepp'r	71 40
Nov. 8	80	Sterling & Co.....	Marble oil cloth and rol- ler ends.....	19 78
Oct. 22	81	Strauss Bro. & Miller.....	Dry-goods	101 01
15	82	Charles Thomas	Undertaking	15 00
28	83	Strong, Cobb & Co	Drugs and medicines ...	42 86
Nov. 4	84	T. W. Thrall.....	Sweet potato's and appl's	20 50
Oct. 29	85	E. W. Tyler	Hardware	21 74
Nov. 11	86	Richard Urban	Straw	12 49
8	87	Weideman & Co.....	Groceries	163 67
1	88	W. U. Telegraph Co	Telegraph messages.....	27 11
14	98	Thos. Wilson	Corn meal and oats	16 34
Oct. 21	90	N. A. Witherell.....	Cheese	22 08
Nov. 11	91	Abraham Wolf	Cider	17 43
Oct. 25	92	The Geo. Worthington Co...	Horse blankets and hard- ware	17 80
Total.....				<u>\$12,002 52</u>
<i>Salaries of Officers.</i>				
Nov. 15	93	Officers' pay-roll	Salaries	\$425 22
<i>Ordinary Repairs.</i>				
15	94	Employes' pay-roll	Labor on burned build'g	349 58
<i>Painting.</i>				
Oct. 23	95	R. T. Holden	Paints and material.....	19 50
20	96	A. T. Osborne & Co	Turpentine, varnish and brushes	31 35
				<u>\$50 85</u>
<i>Books and Pictures.</i>				
Nov. 8	97	Cobb, Andrews & Co.....	Subscriptions	\$44 15
Oct. 10	98	E. M. Hessler	Book	1 75
Total.....				<u>\$45 90</u>

REPORT OF FARM AND GARDEN PRODUCTS.

Articles.	Quantity.	Average.	Amount.
Apples.....	191 bushels...	\$ 50	\$95 50
Asparagus.....	3,000 bunches	05	150 00
Beans, string	120 bushels...	75	90 00
" Lima	75 " ...	1 00	75 00
Beets, green.....	60 " ...	40	24 00
" ripe	292 " ...	50	146 00
Cabbage, early.....	2,400 heads...	04	96 00
Cauliflower.....	200.....	08	16 00
Carrots.....	80 bushels....	40	32 00
Celery	2,700 heads ...	05	135 00
Corn, sweet	114 bushels...	50	57 00
Cucumbers.....	10 " ...	1 00	10 00
Currants	585 quarts	10	58 50
Lettuce	64 bushels....	50	32 00
Onions, green.....	60 " ...	60	36 00
" ripe	127 " ...	75	95 25
Peas	100 " ...	90	90 00
Parsnips	150 " ...	90	135 00
Potatoes.....	750 " ...	75	562 50
Peppers.....	7 dozen	15	1 05
Pears	85 bushels....	1 00	85 00
Rhubarb	5,405 lbs	02	108 10
Radishes	10 bushels....	1 00	10 00
Raspberries	150 quarts	12	18 00
Spinach	60 bushels....	50	30 00
Squash, summer	490 heads.....	03	14 70
" Hubbard	500 "	05	25 00
Salsify	150 bushels...	60	90 00
Strawberries.....	650 quarts	07	45 00
Tomatoes, green and ripe	180 bushels...	75	135 00
Turnips	77 " ...	50	38 50
Hogs, slaughtered	9,112 lbs.....	05	455 60
Young pigs sold	110.....	3 07	338 00
Calves sold	5.....	3 60	18 00
Milk produced.....	49,544 lbs.....	1 40	693 62
Oats, straw	6 tons	9 00	54 00
Oats	360 bushels...	33	118 80
Total.....	.....	.....	\$4,214 12

ARTICLES MADE IN SEWING-ROOM.

Articles.	Number.
Christmas banner.....	1
Chemises	67
Counterpanes	150
Curtains	2 prs.
Clothes sacks.....	125
Drawers.....	30 prs.
Dresses	139
Mittens	10 prs.
Napkins.....	219
Night gowns.....	30
Over sleeves.....	2 prs.
Pants	2 "
Pillow slips.....	609
Pillow ticks.....	38
Sheets	988
Shirts	450
Skirts	76
Sleeves.....	55
Suspenders, ticking.....	80
Table-cloths	180
Towels, dish.....	419
" hand.....	799
" roller	808
Ticks	19
Ties.....	88
Quilts, gingham.....	50
" pieced	7
" ticking	500
Under waists.....	12

RECEIPTS FROM OUTSIDE SOURCES.

Articles.	Amount.	Total.
Coke, 2,306 bushels.....	\$178 19	
Tar, 150 barrels.....	378 00	
Empty barrels, 279.....	40 28	
Old Cameron pump.....	50 00	
Hogs, 1 only.....	5 00	
Jersey bull.....	23 00	
Difference in cow trade.....	9 00	
Calves, 5.....	18 00	
Young pigs, 110.....	338 00	
Sale of flowers and plants.....	259 42	
Rags, tea, lead and paper.....	78 43	
Old iron, 4,470 pounds.....	22 35	
Bones, 8,221 "	61 64	
Old pickets, 270 "	5 40	
Lead, lumber, oil and pickets.....	22 38	
Pine and walnut lumber and cotton batting.....	3 34	
Utica mills, cotton, 12 yards.....	1 08	
Spring wire for coat-hangers.....	10	
Making clothing for patients.....	28 50	
Sleeves quilted, 1 pair.....	2 00	
Counties for clothing.....	2,666 53	
		\$4,190 64

FRUITS—CANNED, PRESERVED AND PICKLED.

Articles.	Quantity.
Citrons.....	2 gallons.
Currants	53½ "
Elderberries	50 "
Grapes.....	790 "
Huckleberries	45¼ "
Jam, currant.....	3½ "
" black raspberry.....	4¼ "
" red	5½ "
Jelly, currant.....	14¾ "
" crab apple.....	20 glasses.
" plums	13 "
" peach	11 "
" quince.....	129 "
Pears	129¼ gallons
Peaches	35¾ "
Plums.....	4½ "
Pie-plant.....	115 "
Quinces	9½ "
Raspberries	23 "
Spiced currants...	5¼ "
Tomatoes..	169½ "
Pickles, crab apples.....	3 "
" cucumbers	17 "
" chili sauce.....	13¼ "
" mixed	7 ½ "
" pears.....	15¾ "
" peaches	18½ "
" tomatoes.....	3 barrels.

ESTIMATES OF COST OF MANUFACTURING GAS FOR FISCAL YEAR 1887.

	Amount.	Total.
<i>Dr.</i>		
To 493 ¹⁰⁰ / ₂₀₀₀ tons Youghiogheny lump coal, @ \$2.17 ¹ / ₅	\$1,120 61	
534 bushels lime, @ 24 ³ / ₅ c.....	131 95	
12 months' labor of one man.....	336 41	
12 " board of "	160 60	
3 retorts and settings, purchased in 1886.....	110 00	
Freight on retorts and setting, paid in 1886.....	31 79	
3 days' labor of mason setting retorts, @ \$3.50.....	10 50	
3 " " helper, 1.75.....	5 25	
600 fire-brick, @ \$30 per M.....	18 00	
3,334 pounds fire-clay, @ \$3.00 per ton.....	5 00	
500 bushels coke on hand.....	40 00	
1 iron tank for tar.....	28 00	
1,143 pounds castings, @ 3c.....	34 29	
2 scoop shovels, @ \$1.20.....	2 40	
		\$2,034 80

ESTIMATE OF COST OF MANUFACTURING GAS FOR FISCAL YEAR 1887--Concluded.

	Amount.	Total.
<i>Cr.</i>		
By 150 barrels tar sold.....	\$278 00	
2,512 bushels coke sold.....	194 65	
1,410 " " used ..	141 10	
		\$613 75
Net cost.....		\$1,421 05

4,348,000 cubic feet of gas made during the year.

Average cost per 1,000 cubic feet, 32 cents.

Yield of coal is 4½ cubic feet of gas for each pound of coal consumed.

The gas works have been in operation for twelve years, producing in this time 38,339,900 cubic feet of gas, at the net cost of \$18,361.15, the average cost being 47½ cents per 1,000 cubic feet.

SUMMARY OF CONTRACTS FOR THE FISCAL YEAR 1887.

Date.	With whom.	For what.	Remarks.
1887. Apr. 16	Fisher & Hathaway..	Milk supply for year.....	\$1.20 per 100 lbs. for summer milk, and \$1.75 per 100 lbs.for winter milk.
Sept. 1	Gabriel Schaffner.....	Fresh beef for one year.....	\$6.50 per 100 lbs. for whole carcass.
		Fresh mutton for one year.....	\$7.00 per 100 lbs. for whole carcass.
Sept. 1	Man'f'g Coal Co....	Supply for one year of Colum- biana screened lump coal, from mines at Salineville, Ohio.....	\$1.38 per ton de- livered on asylum switch of the C. & P. R. R.
Sept. 1	Thomas Burden.....	Drawing coal supply for one year from asylum switch of the C. & P. R. R.....	17c per ton.

ANNUAL REPORT
OF THE
MIAMI UNIVERSITY,
TO THE
Governor of the State of Ohio,
FOR THE
FISCAL YEAR ENDING NOVEMBER 15, 1887.

ANNUAL REPORT.

To the Hon. J. B. FORAKER, Governor of Ohio:

I herewith submit the annual report of R. W. McFarland, President of the Miami University, setting forth the condition of that institution during the past year. Also the report of R. H. Bishop, Secretary, giving a detailed statement of the receipts and expenditures during the year.

The Board of Trustees of the Miami University desire again to express their cordial thanks to the legislature of the State of Ohio for the assistance rendered to that institution during the past year. All the money appropriated by the State has been judiciously and economically expended. We trust that the same liberality will be extended to this institution in the future. No money can be more profitably expended than in providing for the liberal education of our young men at home.

Respectfully submitted.

JOHN W. HERRON,
President Board of Trustees Miami University.

OXFORD, O., November 15, 1887.

Hon. J. W. Herron, President of the

Board of Trustees Miami University:

SIR: I make the following report on the internal affairs of the university for the past year:

The increase in the number of students over the corresponding term of last year, is 42 per cent. Thirty-five new students have been enrolled within this term. There are now the regular classes of the college, senior, junior, sophomore and freshman; and two classes in the preparatory department.

Large additions have been made to the equipment of the department of natural science; and the university is in far better condition than ever before, for giving instruction in the several subjects grouped in those departments.

Large additions have been made to the library, over eleven hundred and fifty volumes having been added since the opening of the university, two years ago; and the number of volumes is increased every month.

The grounds have been properly kept, and a brick walk eight feet wide and six hundred feet long has been put down for the convenience of those concerned in college work.

The general deportment of the students is manly, and their progress in study is commendable.

Judicious friends of the college should be entirely satisfied with its present condition and future prospects.

R. W. MCFARLAND, *President.*

STATEMENT OF MONEY RECEIVED AND PAID OUT AT OFFICE OF TREASURER OF MIAMI UNIVERSITY DURING YEAR ENDING SEPT. 6, 1887.

Received from rents on lands.....	\$5,915 15
“ interest on delinquents.. ..	48 82
“ notes paid..... ..	3,250 00
“ interest on notes.....	3,944 46
“ tuition, \$1,970.00; room rent, \$163.00....	2,133 00
“ State of Ohio.....	2,470 33
“ posts sold.....	240 00
“ pasture	308 32
<hr/>	
Total amount received... ..	\$18,330 38
Balance in Treasury Sept. 6, 1886.....	3,003 24
<hr/>	
	\$21,333 62

Paid out to Faculty	\$11,200 00
“ literary societies.....	467 58
“ chapel windows.....	182 48
“ Prof. McFarland for labor.....	173 73
“ fuel	280 66
“ Treasurer	300 00
“ Secretary	100 00
“ janitor	360 00
“ sundries	471 09
“ contingent	85 43
“ Alumni dinner.....	60 00
“ library.....	65 20
“ campus	92 63
“ insurance	77 29
“ advertising and printing.....	120 00
“ Department of physics	87 69
“ repairs.....	205 00
“ postage	25 13
“ Miami Journal.....	100 00
“ Rosanna Weber.....	5,000 00
<hr/>	
	\$19,453 91

Balance in the Treasury Sept. 6, 1887.....	\$1,879 71
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By an act of the General Assembly, passed March 21, 1887, the following sums were appropriated in aid of the Miami University, to-wit:

For expenses of Trustees, salary and expenses of Secretary.....	\$800 00
Amount drawn.....	630 10
<hr/>	
Leaving balance of.....	\$169 90
<hr/>	

For repairs of building.....	\$500 00
Amount drawn.....	500 00
	<hr/>
For apparatus.....	\$250 00
Balance from 1886.....	248 50
	<hr/>
	498 50
Amount drawn.....	480 82
	<hr/>
Leaving balance.....	\$17 68
	<hr/>
For library	\$300 00
Balance from 1886.....	687 57
	<hr/>
	987 57
Amount drawn.....	936 76
	<hr/>
Leaving balance	\$52 81
	<hr/>
For salary of treasurer.....	\$300 00
Amount drawn.....	150 00
	<hr/>
	\$150 00
	<hr/>
For care and improvement of campus.....	\$500 00
Amount drawn.....	500 00
	<hr/>
For printing.. ..	\$300 00
Amount drawn.....	208 40
	<hr/>
Leaving balance.....	\$91 60
	<hr/>
For salaries.....	\$1,500 00
Amount drawn.....	1,500 00
	<hr/>

R. H. BISHOP,
Secretary Miami University.

MIAMI UNIVERSITY, November 16, 1887.

ANNUAL REPORT
OF THE
OHIO UNIVERSITY,
TO THE
GENERAL ASSEMBLY OF THE STATE OF OHIO,
FOR THE
FISCAL YEAR ENDING NOVEMBER 15, 1887.

ANNUAL REPORT.

OHIO UNIVERSITY,
ATHENS, OHIO, *November 16, 1887.*

To Hon. J. B. FORAKER, Governor of Ohio :

DEAR SIR : The Trustees of the Ohio University have the honor to submit herewith their annual report for the year ending November 15, 1887.

The whole number of students in attendance was 178, an increase of about 25 over last year. The senior class is larger than any former one since 1870, and there will be several graduates from the elementary normal department besides.

The counties that have availed themselves of the free scholarship to which every county in Ohio is entitled, are the following: Allen, Athens, Champaign, Clarke, Clinton, Coshocton, Darke, Delaware, Fairfield, Fayette, Gallia, Guernsey, Harrison, Highland, Hocking, Holmes, Jackson, Knox, Mahoning, Medina, Meigs, Monroe, Morgan, Perry, Pickaway, Pike, Ross, Scioto, Tuscarawas, Vinton, Washington, Wayne and Wood. There is little doubt that this list will be considerably increased next year.

The Treasurer's report, which is made a part of this, shows that all the items appropriated by the Legislature last spring have been expended, but three: expenses of Trustees, additional apparatus and normal department. Of the two former but a very little remains to our credit. The amount appropriated for current expenses was much too small to supply even the most urgent needs. We, therefore, call special attention to the very great importance of a small deficiency appropriation for this purpose, and for the use of the library and reading-room. We cannot get along with less than about a hundred dollars per month for current expenses and repairs. A few years ago, when the buildings and furnishment were comparatively new, the necessary expenditures for this purpose were considerably less than they are now. The main building is at present almost without insurance, certainly an unfortu-

nate circumstance; the fuel on hand will not last longer than to the end of the year, besides which a considerable gas bill must of necessity be incurred. For all of these items not a cent is left.

Our estimates for the next year can not be brought below the following amounts:

Current expenses and repairs.....	\$1,200 00
Library and reading-room.....	600 00
Apparatus for Mathematical and Physical departments.....	800 00
Trustees' expenses	200 00
On salaries for teachers.....	6,000 00
Total.....	<u>\$8,800 00</u>

We have reason to believe that our recently established normal department has satisfied the expectations of its friends as well as of those students who have availed themselves of the advantages it offers. More than fifty of our students have taken a greater or less amount of work in this department; and we believe it is destined to win rapid favor throughout the entire State as its aims and methods become more fully understood. We need at least two additional teachers to equip it completely, and these we hope to be able to add to our teaching force during the coming year. We must have a sufficient number of teachers before we can invite students with the full assurance that they will find here first class instruction in all the branches they may justly expect to pursue.

Miss Anna A. Lane, of Vineland, N. J., was last August appointed, in conjunction with the school board, as instructor in drawing and vocal music. Most of her time is required in the public schools, but it was only possible by some such arrangement to have a teacher at all for these important branches. Her work has thus far been entirely satisfactory, but the present arrangement entails upon her more labor than she can be expected to continue to do in justice to herself.

The pupils of one grade of the public school are now taught, by an understanding with the city school board, in the school-room of the university. In this way the students of the normal department are enabled, without inconvenience, to gain some practical experience in the school-room, and to apply the theoretical principles they have learned in the class-room. There ought, however, to be at least three grades available for the purpose had in view instead of one; and to secure these the most serious drawback is want of room. It is the work of a properly equipped normal department not only to instruct intending teachers, but to train them as well. The university has been so unfortunate as to lose the services of Dr. C. L. Mees, for five years in

charge of its department of Physics and Chemistry. He resigned last September to engage in similar work in the Rose Polytechnic Institute. While we greatly regretted to be compelled to dispense with his valuable services, it was not within our power to offer such inducements as would have made it wise for him to remain. The remuneration which he receives in his new field of labor we understand to be about twice what he has been receiving from us. His place has not yet been permanently filled. Mr. W. M. Stine, Professor Mees' very efficient assistant, has been placed temporarily in charge of the department until a regular professor can be elected. A gymnasium has recently been erected on the college grounds. It had become very necessary to make some arrangement by which our students could take some kind of regular and systematic physical exercise. The students had realized its importance to such an extent that they voluntarily contributed a considerable proportion of the money needed to put up the present building. It is a plain structure, 24x40 feet, with fifteen-foot ceiling, and was erected at a cost of a little over four hundred dollars. Mr. Calvin Humphrey, a member of the senior class, who had given considerable attention to the subject of athletics, has charge of the classes in gymnastics.

No subject has more earnestly engaged our attention than the question of reducing the charges for tuition to the lowest possible figures. It is one that comes up for discussion at every meeting, and yet not much progress has been made, nor is there likely to be with our present resources. We have, therefore, asked the Legislature to make a somewhat larger appropriation for salaries than formerly, in order that tuition fees may at least be reduced in the collegiate department to a level with those now charged in the Preparatory Department. The library of the Normal Department is indebted to the Hon. Eli T. Tappan, State Commissioner of Common Schools, for a number of valuable volumes and periodicals. We hereby tender to him our sincere thanks for the same.

The annual catalogue of the University is made a part of this report.

CHAS. W. SUPER,
President Board of Trustees.

Ohio University, November 16, 1887.

TREASURER'S REPORT.

TREASURER'S OFFICE, OHIO UNIVERSITY,
ATHENS, November 15, 1887.

CHARLES W. SUPER, *President of Ohio University*:

DEAR SIR: I submit herewith my annual report of the receipts and expenditures of the Ohio University, for the fiscal year ending November 15, 1887.

Respectfully,

E. H. MOORE, *Treasurer*.

RECEIPTS.

Balance November 15, 1886.....	\$1,632 16	
Appropriation from State warrants 42 to 55, inclusive.....	3,407 97	
Balance from County Treasurer November 1886.....	118 24	
January interest 1887, Sinking Fund, 1887	251 87	
Tuition winter term	\$579 00	
" spring " 	775 00	
	<hr/>	1,354 00
Rent amount collected	\$2,644 04	
Tax amount collected.....	29 41	
	<hr/>	2,673 45
From County Treasurer	600 00	
	<hr/>	
Amount receipts to June 20, 1887		\$10,037 69
Appropriation from State warrants 56 to 69, inclusive.....	2,096 20	
C. W. Super, diplomas.....	\$10 00	
" use of Hall.....	20 00	
" gas refunded	15 50	
" Gymnasium Association	58 00	
	<hr/>	103 50
Tuition fall term.....	1,314 00	
Balance County Treasurer duplicate, 1886.....	1,197 14	
Rent duplicate	\$791 76	
Interest.....	17 92	
	<hr/>	809 68
Tax duplicate.....	\$15 00	
Interest	2 63	
Amount receipts June 20 to November 15, 1887		5,795 72
	<hr/>	
Total receipts for year ending November 15, 1887.....		\$15,833 41
Warrants redeemed November 15, 1886, to June 20, 1887, Nos. 1,302 to 1,493, inclusive.....	8,900 95	
Warrants redeemed June 20 to November 15, 1887, Nos. 1,494 to 1,648, inclusive.....	6,477 77	
Balance November 15, 1887	454 69	
	<hr/>	15,833 41

EXPENDITURES.

Paid for Salaries of Faculty and Teachers.

C. W. Super, President.....	\$1,700 00	
C. Leo Mees, Professor.....	1,000 00	
William Hoover, Professor.....	1,200 00	
H. T. Sudduth, ".....	1,200 00	
D. J. Evans, ".....	1,200 00	
J. P. Gordy, ".....	1,500 00	
Eli Dunkle, ".....	1,000 00	
W. M. Stine, instructor.....	526 00	
Lillian E. Michael, instructor.....	300 00	
Magda A. Ebert, ".....	600 00	
May Donnally, ".....	550 00	
Clara Weihr, ".....	65 00	
Anna A. Lane, ".....	52 00	
Albert Leonard, tutor.....	90 00	
A. E. Price, ".....	35 00	
E. B. Skinner, ".....	22 50	
R. J. Jackson, and others, janitor	368 00	
E. H. Moore, Treasurer	500 00	
L. M. Jewett, Secretary	75 00	
		11,983 50
.....	\$10 93	
Paid current expenses and repairs.....	1,176 39	
" Trustees' traveling expenses.....	139 72	
" advertising.....	231 74	
" Chemical and Physical Department	369 53	
" Fuel	114 51	
" Gas.	199 45	
" Postage	58 43	
" Library and Reading-room.....	695 74	
" Gymnasium.....	398 78	
		3,395 22
Total expenditures.....	\$15,378 72	
Balance as above	454 69	
		\$15,833 41

DETAILED STATEMENT OF EXPENDITURES.

Date.	Orders.	To whom paid.	Amount.
1886.			
Nov. 19	1302	Evans, D. J., salary November, 1886.....	\$100 00
22	1303	Hancock, John, Trustee expenses	6 75
30	1304	Dunkle, Eli, salary November, 1886.....	83 33
Dec. 1	1305	Super, C. W., " "	141 66
	1306	Mees, C. Leo, " "	100 00
	1307	Hoover, Wm., " "	100 00
	1308	Sudduth, H. T., salary "	100 00
	1309	Gordy, J. P., salary November, 1886, Normal.....	125 00
	1310	M. A. Ebert, " " 1886	50 00
	1311	Stine, W. M., " " 1886	47 00
	1312	Weihr, Clara, " " 1886	10 00
	1313	Jackson, R. J., salary November, 1886, janitor.....	25 00
4	1314	Evans, D. J., " December, 1886.....	100 00
	1315	Mees, C. Leo	95 25
	1316	"	28 98
	1317	Twiss, Geo. H., bill of books, Normal Department	2 98
	1318	Cullom, J. H., stone work, "	9 00
	1319	Loshe, John "	5 05
	1320	College Current, advertising	10 00
	1321	Ricketts, C. L., preparing diplomas	4 00
	1322	Jackson, R. J., labor	4 45
	1323	Robert Clarke & Co., Volume III, American Enc.....	10 00
	1324	Bundy, W. E., advertising	5 30
	1325	Kenyon News Agency, periodicals, Normal Dep't.....	4 19
	1326	Super, C. W., books, Normal Dep't	13 10
	1327	Gordy and Super, traveling expenses, Normal Dep't...	23 90
	1328	McMillen & Co., books, Normal Dep't	12 08
	1329	Westerman & Co., periodicals, Normal Dep't.....	16 25
14	1330	Burchfield, D. M., brooms.....	3 50
20	1331	Alden, E. & Co., advertising Normal Dep't.....	115 00
	1332	Moore, E. H., Treasurer.....	150 00
23	1333	Mees, C. Leo., salary December, 1886.....	100 00
	1334	Gordy, J. P., salary December, 1886, Normal Dep't....	125 00
	1335	Dunkle, Eli, " "	83 33
	1336	Super, C. W., " "	141 66
	1337	Hoover, Wm., " "	100 00
	1338	Sudduth, H. T., salary December, 1886	100 00
	1339	Ebert, M. A., " "	50 00
	1340	Stine, W. M., " "	47 00
	1341	Weihr, Clara, " "	10 00
	1342	Jackson, R. J., " " janitor	25 00
	1343	Donnally, May, " "	50 00
24	1344	Van Antwerp, Bragg & Co., books, Normal Dep't.....	27 00
	1345	Brannon, J. G., photograph.....	3 00
	1346	Estes & Lauriat, books, Normal Dep't	4 70
27	1347	Evans, D. J., salary January, 1887	100 00
30	1348	Half, Isaac, furniture	8 75
1887.			
Jan. 7	1349	Jackson, R. J., sundries.....	6 85
	1350	Inter-National News Co., newspapers.....	4 19
	1350 _a	Smythe, A. H., bill of books, Normal Dep't	28 43
8	1351	Sheldon, C. C., postage.....	10 00
27	1352	Gabriel, A. L., labor	22 00
28	1353	Super, C. W., salary January, 1887.....	141 66
	1254	Mees, C. Leo., " "	100 00
	1355	Hoover, Wm., " "	100 00
	1356	Sudduth, H. T., " "	100 00

DETAILED STATEMENT OF EXPENDITURES—Continued.

Date.	Orders.	To whom paid.	Amount.
1887.			
Jan. 28	1357	Gordy, J. P., salary January, 1887, Normal Dep't.....	\$125 00
	1358	Ebert, M. A., salary January, 1887	50 00
	1359	Stine, W. M., " " Normal Dep't	47 00
	1360	Weihr, Clara, " " "	10 00
	1361	Jackson, R. J., " " janitor	25 00
	1362	Donnally, May, " " Normal Dep't.....	50 00
	1363	Michael, Lillian, " " "	50 00
31	1364	Dunkle, Ely, " "	83 33
Feb. 1	1365	Evans, D. J., February salary, 1887	100 00
11	1366	Jenkins, Thomas, assistant janitor.....	21 00
12	1367	Super, C. W., sundries	11 63
	1368	Mintern, Chas. H., insurance.....	16 60
19	1369	Weihr, Clara, balance salary, Normal Dep't	5 00
	1370	Zenner, D. & Co., merchandise.....	8 44
25	1371	Evans, D. J., salary March, 1887.....	100 00
	1372	Dunkle, Eli, " February, 1887	83 33
28	1373	Michael, Lillian, salary February, 1887, Normal Dep't	50 00
	1374	Super, C. W., " "	141 66
	1375	Mees, C. Leo., " "	100 00
	1376	Hoover, Wm., " "	100 00
	1377	Sudduth, H. T., " "	100 00
	1378	Gordy, J. P., " " Normal Dep't	125 00
	1379	Ebert, M. A., " "	50 00
	1380	Stine, M. A., " "	47 00
	1381	Jackson, R. J., " " janitor	25 00
	1382	Donnally, May, " "	50 00
Mar. 1	1383	Jackson, R. J., labor	6 65
	1384	Westerman, E. & Co., bill books, Normal Dep't.....	38 41
	1385	The Rural Home, advertising	5 00
	1386	College Current, bill books, Normal Dep't.....	16 45
	1387	Venable, Burns & McLean, lectures	57 00
4	1388	Leonard, Albert, clerk, Normal Dep't.....	15 00
5	1389	Roach, A. L. & Son, merchandise, Normal Dep't	4 06
	1390	Athens Herald, printing.....	21 50
14	1391	Super, C. W., Trustee expenses	17 40
15	1392	Mees, C. Leo., supplies, Normal Dep't.....	20 73
17	1393	Price, E. A., extra teaching	7 00
23	1394	Athens Journal, printing	11 00
	1395	Athens Gas Light Co., coke and coal	19 31
	1396	" " gas	10 00
	1397	" " "	88 50
24	1398	Mathews, Pleasant, plastering.....	3 70
	1399	Neiswander, J. S., use of piano.....	5 00
	1400	Campbell, I. C., tables Normal Department.....	13 35
28	1401	Jewett, L. M., Secretary pt., salary.....	25 00
	1402	Kenyon News Co., bill periodicals.....	8 95
	1403	Smythe, A. H., bill of books Normal Department.....	20 53
29	1404	Richey, Wm., carpenter work.. ..	11 15
30	1405	Dunkle, Eli, March salary, 1887.....	83 33
	1406	Nimrod, Goings, shade trees.....	5 50
	1407	West, Kate, labor.....	5 00
31	1408	Michaels, Lillian, March salary, 1887, Normal Dep't...	50 00
	1409	Super, C. W., " "	141 66
	1410	Mees, C. Leo., " "	100 00
	1411	Hoover, Wm., " "	100 00
	1412	Sudduth, H. T., " "	100 00
	1413	Gordy, J. P., " " Normal Dep't.....	125 00

DETAILED STATEMENT OF EXPENDITURES—Continued.

Date.	Orders.	To whom paid.	Amount.
1887.			
Mar. 31	1414	Ebert, M. A., March salary, 1887.....	\$50 00
	1415	Stine, W. M., " " Normal Dep't....	47 00
	1416	Donnally, May, " "	50 00
	1417	Jackson, R. J., " " janitor	25 00
April 1	1418	Sheldon, C. C., postage	10 00
	1419	Bartlett & Kurtz, bill hardware.....	86 99
2	1420	Evans, D. J., April salary, 1887....	100 00
8	1421	Westerman, B. & Co., bills books Normal Dep't.....	31 20
	1422	Marsh, B. A., painting.....	5 25
14	1423	Brown, John, labor.....	7 50
15	1424	The College Current, bill books.....	12 90
	1425	Super, C. W., bill books.....	12 10
23	1426	Baker, G. W., books and paper.....	4 25
26	1427	The Athens Herald, periodicals.....	19 10
27	1428	Jackson, R. J., labor	11 55
29	1429	Super, C. W., April salary, 1887, pt.....	47 74
	1430	Mees, C. Leo, " "	100 00
	1431	Hoover, Wm., " "	100 00
	1432	Sudduth, H. T., " "	100 00
	1433	Gordy, J. P., " " Normal Dep't.....	125 00
	1434	Ebert, M. A., " "	50 00
	1435	Stein, W. M., " " Normal Dep't.....	47 00
	1436	Donnally, May, " "	50 00
	1437	Jackson, R. J., " " janitor	25 00
	1438	Dunkle, Eli, " "	83 33
	1439	Michael, Lillian, " " Normal Dep't.....	50 00
	1440	Weihr, Clara, " " " "	10 00
May 2	1441	Leonard, A., " "	30 00
	1442	Price, A. E., " "	8 00
	1443	Super, C. W., " " bal	100 00
	1444	Clarke, Robert & Co., vol. 21 Ency. Britannica.....	10 00
	1445	Evans, D. J., May salary, 1887.....	100 00
4	1446	Hoover, Wm., bill of books.....	7 90
	1447	Magazine Western History.....	5 00
	1448	Worley, J. W., Logan's Great Conspiracy....	3 75
	1449	Van Antwerp, Bragg & Co., bill of books.....	12 00
	1450	Alden, J. B., bill books.....	39 20
11	1451	Christian Literary Co., books.....	28 00
	1452	Leonard Scott Publishing Co., periodicals.....	5 05
	1453	Smythe, A. H., bill of books.....	51 19
12	1454	Craft, E. B., fuel.....	7 70
18	1455	McMillen & Co., bill of books.....	23 97
	1456	Columbus, Dispatch, advertising	20 00
	1457	Super, C. W., Trustee expense.....	23 85
28	1458	The Athens Herald, periodicals Normal Dep't.....	13 95
	1459	" " printing	6 50
31	1460	Hoover, Wm., May salary, 1887.....	100 00
	1461	Super, C. W., " "	141 66
	1462	Mees, C. Leo, " "	100 00
	1463	Sudduth, H. T., " "	100 00
	1464	Gordy, J. P., " " Normal Dep't.....	125 00
	1465	Ebert, M. A., " "	50 00
	1466	Stine, W. M., " " Normal Dep't.....	47 00
	1467	Donnally, May, " " " "	50 00
	1468	Jackson, R. J., " " janitor	25 00
	1469	Dunkle, Eli, " "	83 33
	1470	Michael, Lillian, " "	50 00

DETAILED STATEMENT OF EXPENDITURES—Continued.

Date.	Orders.	To whom paid.	Amount.
1887.			
June 2	1471	Falloon, George, lumber	\$2 60
	1472	Campbell, J. C., furniture.....	5 50
	1473	Fullman, McFadden & Co.....	48 60
	1474	Mees, C. Leo, apparatus chem. and physical dep't.....	5 50
	1474	Athens Water W. & M. Co. " "	14 80
	1475	Goodnow & Wightmore, " "	14 33
	1476	Weihr, Clara, May salary, 1887, Normal Dep't.....	10 00
6	1477	Smythe, A. H., bill books, " "	29 25
7	1478	Jenkins, Thomas, janitor, " "	15 00
	1479	Bartlett & Kurtz, hardware.....	186 30
9	1480	Siebert & Lilley, stationery.....	10 30
	1481	Gabriel, Eber, gravel.....	4 50
13	1482	Super, C. W., bill of books.....	5 40
	1483	" " "	16 55
	1484	Putnam & Fletcher, wall paper.....	5 40
	1485	Bartlett & Kurtz, hardware.....	6 90
	1486	Burchfield, D. M., merchandise.....	3 25
15	1487	Roach, R. W., repair of tin roof.....	26 70
16	1488	Westerman, B. & Co., bills of books.....	18 36
	1489	Campbell, J. C., furniture.....	15 50
	1490	Moore, E. H., Treasurer	100 00
	1491	" Trustee expense.....	28 02
	1492	" stationery	3 62
	1493	Jenkins, Thomas, labor.....	3 00
20	1494	Bundy, H. S., Trustee.....	11 75
21	1495	Wiles, Perry, "	8 00
	1496	Donnally, May, June salary, 1887, Normal Dep't.....	50 00
	1497	Elm Street Printing Co., diplomas.....	14 00
22	1498	Mees, C. Leo, June salary, 1887.....	100 00
	1499	Lowry, V. C., Trustee.....	5 50
	1500	Jackson, R. J., sundries.....	9 67
	1501	Reed, J. J., university address.....	33 00
	1502	Super, C. W., June salary, 1887.....	141 66
	1503	Witman, B. F., chemical and physical department....	19 15
	1504	Stine, W. M., June salary, Normal Dep't.....	47 00
	1505	Hoover, Wm., "	100 00
	1506	Sudduth, H. T., "	100 00
	1507	Evans, D. J., "	100 00
	1508	Gordy, J. D., " Normal Dep't.....	125 00
	1509	Ebert, M. A., "	50 00
	1510	Dunkle, Eli, "	83 33
	1511	Michael, Lillian, " Normal Dep't.....	50 00
	1512	Weihr, Clara, " " "	10 00
	1513	Jenkins, Thomas, " " "	6 00
23	1514	Hibbard, Fred., music commencement.....	45 00
	1515	Hancock, John, Trustee.....	4 80
	1516	Guitteau & Connett, bill lumber.....	18 15
24	1517	Gist, W. W., commencement sermon.....	20 00
July 1	1518	Jackson, R. J., salary June.....	25 00
11	1519	Evans, D. J., July salary, 1887.....	100 00
	1520	Jewett, L. M., Secretary.....	25 00
13	1521	Sheldon, C. C., postage.....	10 73
	1522	Brown, John, labor.....	9 00
14	1523	Athens Journal, printing.. ..	13 00
16	1524	Davis, J. C., janitor commencement.....	5 00
26	1525	Falloon, George, bill lumber.....	10 36
	1526	" " " Normal Dep't.....	11 41

DETAILED STATEMENT OF EXPENDITURE—Continued.

Date.	Orders.	To whom paid.	Amount.
1887.			
July 23	1527	Looke, John, penman.....	\$8 90
30	1528	McMillan & Co., library and reading-room.....	2 08
	1529	Dunkle, Eli, July salary, 1887.....	83 33
	1530	Super, C. W., " ".....	141 66
Aug. 1	1531	Miller, Joseph, repairing walks.....	10 00
	1532	Evans, D. J., August salary, 1887.....	100 00
	1533	Sudduth, H. T., July ".....	100 00
	1534	Mees, C. Leo, " ".....	100 00
	1535	Gordy, J. D., " " Normal Dep't.....	125 00
	1536	Hoover, Wm., " ".....	100 00
	1537	Donnally, May, " " Normal Dep't.....	50 00
	1538	Ebert, M. A., " ".....	50 00
	1539	Jackson, R. J., " " janitor.....	25 00
	1540	Patterson, T. M., book binding.....	21 75
	1541	" " ".....	12 75
	1542	Westerman, B. & Co., magazines.....	19 25
	1543	" " " Normal.. ..	41 63
	1544	Dent, E. A., advertising.....	9 80
	1545	Dana, J. P., books, Normal Dep't.....	10 00
	1546	Magazine, West. History, Normal Dep't.....	4 00
	1547	Half, Isaac, furniture.....	8 40
	1548	Athens W. M. Co., castings.....	28 60
	1549	Lowry, V. C., Trustees' expenses.....	2 35
6	1550	C. W. & B. R. R., freight.....	93
	1551	Super, C. W., sundries.....	10 60
	1552	Siebert & Lilley, blank books.....	19 30
8	1553	Hibbard & Hibbard, hardware.....	11 90
	1554	Lush, E. R., drugs.....	4 90
9	1555	Richey, Wm., carpenter work.....	11 75
12	1556	Athens Herald, printing.....	5 00
13	1557	Athens W. M. Co., castings.....	4 00
27	1558	Clark, A. S. & Co., periodicals.....	3 14
Sept. 1	1559	Super, C. W., August salary, 1887.....	141 66
	1560	Sudduth, H. T., " ".....	100 00
	1561	Gordy, J. P., " " Normal Dep't.....	125 00
	1562	Hoover, Wm., " ".....	100 00
	1563	Dunkle, Eli, " ".....	83 33
	1564	Jackson, R. J., " " janitor.....	25 00
	1565	Evans, D. J., Sept. salary, 1887.....	100 00
5	1566	Gordy, J. P., postage.....	14 70
	1567	Athens Journal, advertising.....	4 00
	1568	Leonard, Albert, ".....	11 00
	1569	Appleton, D. A. & Co., periodicals.....	12 00
	1570	Putnam & Fletcher, blank book.....	1 85
	1571	Ebert, M. A., August salary, 1887.....	50 00
6	1572	Donnally, May, " Normal Dep't.....	50 00
8	1573	Mees, C. Leo, ".....	100 00
17	1574	Lowry, V. C., Trustee.....	2 60
	1575	Sheldon, C. C., postage.....	10 00
	1576	Queen, J. W. & Co., chemical and physical apparatus..	90 31
	1577	Reichardt, Adolph, " ".....	64 00
	1578	Neiswander, J. S., use of piano.....	5 00
	1579	Herald & Presbyter, advertising.....	7 00
	1580	Whitaker, W. H., ".....	28 64
	1581	Scott, John R., diplomas.....	4 00
19	1582	Whitfield, Sophia, labor.....	5 00

DETAILED STATEMENT OF EXPENDITURES—Continued.

Date.	Orders.	To whom paid.	Amount.
1887.			
	1583	Athens Gas Light Co., gas bill.. .. .	\$17 37
	1584	" " "	83 58
	1585	" " "	11 62
Sept. 27	1586	Jewett, L. M., Secretary.....	25 00
28	1587	Dunkle, Eli, September salary, 1887.....	83 37
30	1588	Super, C. W., " "	141 66
	1589	Lane, A. A., " "	26 00
	1590	Hoover, Wm., " " Normal Dep't.....	100 00
	1591	Sudduth, H. T., " "	100 00
	1592	Donnally, May, " " Normal Dep't.....	50 00
	1593	Ebert, M. A., " "	50 00
	1594	Gordy, J. P., " " Normal Dep't.....	125 00
	1595	Stine, W. M., " " "	50 00
	1596	" " "	25 00
	1597	Jackson, R. J., " " janitor	25 00
	1598	Skinner, E. B., " "	7 50
	1599	Price, A. E., " "	10 00
	1600	Leonard, Albert, " "	30 00
Oct. 5	1601	Evans, D. J., October "	100 00
13	1602	Columbus Record, advertising.....	1 50
	1603	Super, C. W., Trustee	8 90
14	1604	Gudey, W. & L. E., math. apparatus	5 20
	1605	Roberts, Fr., asst. janitor.....	15 00
	1606	Jenkins, Thomas.....	6 00
	1607	Athens Gas Co., fuel.....	15 88
	1608	Jackson, R. J., sundries	8 13
	1609	Westerman, B. & Co., books.....	2 20
17	1610	" " "	11 50
	1611	Jackson, A. W. & Sons, "	8 60
	1612	Mees, C. Leo, chem. and physics	4 94
	1613	Marietta Times, advertising	2 50
27	1614	Moore, E. H., Treasurer.....	50 00
	1615	Not issued .. .. .	.....
28	1616	Sheldon, C. C., postage.....	3 00
29	1617	Reid, R. H., carpenter work repairs.....	8 27
31	1618	Dunkle, Eli, October salary, 1887.....	83 37
	1619	Super, C. W., " "	141 00
	1620	Lane, Anna A., " " Normal Dep't.....	26 00
	1621	Hoover, Wm., " "	100 00
	1622	Sudduth, H. T., " "	100 00
	1623	Donnally, May, " " Normal Dep't.....	50 00
	1624	Ebert, M. A., " "	50 00
	1625	Gordy, J. P., " " Normal Dep't.....	125 00
	1626	Stine, W. M., " " "	50 00
	1627	" " "	25 00
	1628	Jackson, R. J., " " janitor	25 00
	1629	Skinner, E. B., " "	15 00
	1630	Price, A. E., " "	10 00
	1631	Leonard, Albert, " " Normal Dep't.....	30 00
	1632	Gordy, J. P., book case.....	15 00
Nov. 5	1633	Queen, J. W. & Co., chem. and physical apparatus	55 30
	1634	Super, C. W., sundries.....	11 07
	1635	Miller, Joseph, labor.....	5 00
	1636	Journal of Pedagogy, advertising	12 00
	1637	Prang Educational Co., books, Normal Dep't.....	9 16
	1638	Lush, E. R., gymnasium apparatus	46 20

DETAILED STATEMENT OF EXPENDITURES—Continued.

Date.	Orders.	To whom paid.	Amount.
1887.			
Nov. 5	1639	Appleton, D. & Co., books.....	\$3 42
	1640	Moore, E. H., Trustee.....	4 80
	1641	Reid, R. H., gymnasium.....	75 00
	1642	" " ".....	277 58
Nov. 10	1643	Guitteau & Connett, lumber.....	14 71
	1644	Snow, Morris, painting.....	18 70
	1645	E. H. Moore, Treasurer.....	200 00
	1646	C. W. Bendine, books.....	3 50
	1647	W. P. Johnson, Trustee.....	15 00
	1648	Village of Athens, rent hall.....	12 00
			<hr/>
		Total for the fiscal year	\$6,477 77
			15,378 72

ANNUAL CATALOGUE OF THE OHIO UNIVERSITY

FOR 1887,

AND

CIRCULAR OF INFORMATION FOR 1887-8.

CALENDAR 1887-8.

FALL TERM begins the first Tuesday in September at 9 o'clock A. M., and closes Friday, December 2, 1887.

WINTER TERM begins December 5, 1887.

HOLIDAY VACATION, one week.

SPRING TERM begins March 26, 1888.

SENIOR EXAMINATIONS begin last Thursday in May.

SUNDAY, JUNE 17, Baccalaureate Address and Annual Sermon.

MONDAY, JUNE 18, Annual Meeting of Board of Trustees and Anniversary of the Literary Societies.

TUESDAY, JUNE 19, Alumni Anniversary and Address.

WEDNESDAY, JUNE 20, Commencement of the Pedagogical Department.

THURSDAY, JUNE 21, Commencement of the Collegiate Department.

FALL TERM begins first Tuesday in September, 1888, and ends the day before Thanksgiving.

WINTER TERM begins on the following Monday.

CORPORATION.

BOARD OF TRUSTEES.

		APPOINTED.
Charles W. Super, (<i>ex-officio</i>).....	Athens.....	—
Gov. J. B. Foraker, (<i>ex-officio</i>).....	Columbus	—
Hon. A. G. Brown	Athens.....	1814
Hon. V. B. Horton	Pomeroy	1844
Hon. John Welch.....	Athens.....	1848
Hon. Robert Wright	Logan.....	1852
Hon. Horace Wilson	Columbus	1853
Hon. J. E. Hanna.....	McConnelsville.....	1854
Hon. George M. Woodbridge.....	Marietta	1857
Hon. E. H. Moore	Athens.....	1861
William Waddle, M. D.....	Chillicothe	1864
Hon. H. S. Bundy	Wellston	1864
William P. Johnson, M. D	Indianapolis.....	1866
Hon. George W. Boyce.....	Cincinnati.....	1875
Supt. John Hancock, LL. D	Chillicothe	1877
Perry Wiles, Esq.....	Zanesville.....	1882
Hon. C. S. Welch.....	Athens.....	1884
V. C. Lowry, Esq	Logan	1885
J. R. Blackburn, A. M	Xenia.....	1885
L. M. Jewett, Esq.....	Athens.....	1887
Hon. Charles Townsend.....	Athens.....	1887

OFFICERS OF THE BOARD.

CHARLES W. SUPER,
President.

LEONIDAS M. JEWETT, Esq.,
Secretary and Auditor.

HON. E. H. MOORE,
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HON. JOHN WELCH, LL. D.,
VIRGIL C. LOWRY, Esq.,
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HON. C. S. WELCH,
L. M. JEWETT, Esq.,
CHAS. W. SUPER,
Executive Committee.

FACULTY.

CHARLES W. SUPER,

President and Professor of Greek and Political Economy.

CARL LEO MEES, M. D.,*

Professor of Physical Science.

DAVID J. EVANS, A. M.,

Professor of Latin.

WILLIAM HOOVER, A. M., Ph. D.,

Professor of Mathematics.

H. T. SUDDUTH, A. M.,

Professor of Rhetoric and English Literature.

JOHN P. GORDY, A. M., Ph. D.,

Professor of Psychology and Pedagogics.

MAGDALENA A. EBERT,

Instructor of Modern Languages.

W. M. STINE, B. Ph.,

Instructor in Physical Science.

ELI DUNKLE, A. M.,

Principal of the Preparatory Department.

CLARA WIEHR,

Instructor in Penmanship.

* Resigned September 15, 1887. Department placed temporarily in charge of Mr. Stine.

EXECUTIVE DOCUMENTS.

LILLIAN E. MICHAEL, B. Ph.,

Instructor in Methods.

MAY DONNALLY,

Instructor in Elocution and Reading

ANNA A. LANE,

Instructor in Music and Drawing.

HARRISON C. BICKEL,

Tutor in Mathematics.

ALBERT LEONARD,

Tutor in Latin and English.

ERNEST B. SKINNER,

Tutor in Physics.

A. ELLSWORTH PRICE,

Tutor in Arithmetic and Geography.

PROFESSOR EVANS,

Secretary.

PROFESSOR DUNKLE,

Librarian.

ACADEMIC HONORS.

[Conferred at Commencement in June, 1887.]

BACHELORS OF ARTS.

Thomas W. Dick Somerset.
Charles H. Higgins Athens.

MASTERS OF ARTS.

In Cursu.

Henry Humphrey, Class of 1884..... Coolville.
George E. de Steiguer, Class of 1884 Athens.

MASTERS OF ARTS.

Pro Honore.

Franklin R. Carpenter..... Rapid City, Dakota.

DOCTOR OF DIVINITY.

Thomas C. Iliff..... Salt Lake City, Utah.
James H. White..... San Buenaventura, Cal.

STUDENTS.

COLLEGIATE DEPARTMENT.

SENIORS.

NAMES.	RESIDENCE.	ROOM.
Barton, Anna R.....	Ilesboro	Mr. W. S. Barton's.
Carleton, John S.....	Coolville	Brown House.
Dent, Elmer A.....	Athens.....	43 E. C.
Humphrey, Calvin.....	Coolville ..	66 W. C.
Leonard, Albert.....	Logan	Mr. Yontz's.
Price, A. Ellsworth	Ilesboro	43 E. C.
Reed, George W.....	Uhrichsville.....	68 W. C.
Skinner, Ernest B	Redfield.....	Prof. Dunkle's.
Woodruff, Edith.....	Marietta.....	Mr. W. W. McVay's.
Worstell, Lawrence G.....	Tappan	68 W. C.

JUNIORS.

Brown, Mable K.....	Athens.....	Mr. Henry T. Brown's.
Douglas, Stephen A.....	Downington	48 E. C.
Hoffman, Wallace.....	Amesville	48 E. C.
Johnson, Sidney H	Trimble	41 E. C.
McVay, Gladys H.....	Athens.....	Mr. W. W. McVay's.
Michael, Lenore ..	"	Mr. Ed. Michael's.
Pickering, Kitty.....	Carthage, Tenn.....	Mr. Sam'l Pickering's.
Sayre, Edwin D.....	Deavertown	33 E. C.
Thomas, J. Cross..	Black Creek.....	41 E. C.
Williams, Daniel W.....	Oak Hill.....	Prof. Evans'.

SOPHOMORES.

Gillilan, Lewis M.....	Jackson C. H.....	Mr. Hobson's.
Jenkins, Thomas.....	Youngstown.....	73 W. C.
McGlenen, Daniel W.....	Creston	66 W. C.
McVay, Herbert G.....	Athens.....	Mr. W. W. McVay's.
Price, Samuel C..	Mutual	52 E. C.
Roberts, Frank H.....	Danville	42 E. C.
Scott, William C.....	Starr	37 E. C.
Varley, William A.....	Athens.....	Mr. J. Varley's.

FRESHMEN.

Atkinson, Albert N.....	Nelsonville.....	42 E. C.
Biddle, David.....	Athens	76 W. C.
Bingham, Ealfrid A.....	Wellston	31 E. C.
Biddle, T. Rollen.....	"	76 W. C.
Blake, Charles F.....	Lee	41 E. C.
Carrick, Charles M.....	Berlin X Roads.....	68 W. C.
Clow, Joseph C.....	North Liberty.....	42 E. C.
Dowd, Ralph P.....	Vinton Station.....	49 E. C.
Dwyer, Orville F.....	New Petersburg....	36 E. C.
Dyson, George.....	Athens.....	Mr. D. Dyson.

NAMES.	RESIDENCE.	ROOM.
Fouts, Charles H.....	Meigs Creek.....	34 E. C.
Grosvenor, Grace.....	Athens.....	Gen. Grosvenor's.
Hall, James M.....	".....	West College.
Hamilton, William E.....	".....	Gen. Hamilton's.
Henry, Lucius N.....	Berlin X Roads..	50 E. C.
Hunt, Reid.....	Martinsville	Edwards House.
Kirkendall, Frances.....	Dawkin's Mills.....	Mr. Jacob Lash's.
Kirkendall, Fred. E. C.....	".....	52 E. C.
McMaster, James C.....	Middleport.....	Mr. O. Brown's.
McVay, Bertha.....	Athens.....	Mr. W. McVay's.
McVay, Anna Pearl.....	".....	"
Norton, Frances.....	".....	Major Norton's.
Robbins, Anta M.....	Hamden Junction..	Mr. Thos. Craig's.
Russell, A. Price.....	Chippawa Lake.....	38 E. C.
Rutherford, Minnie E.....	Mount Blanco.....	Mr. W. McVay's.
Schwefel, Carrie S.....	Athens... ..	Mrs. S. F. Schwefel's.
Scott, John W.....	Nelsonville.....	68 W. C.
Snow, John E.....	Athens.....	Mrs. Eliza Snow's.
Super, Corinne E... ..	".....	President Super's.
Welch, Dudley W.....	".....	Major Welch's.
Welch, Edward G.....	".....	"
Wilson, Thomas C.....	Somerset.....	Prof. Dunkle's.
Woodworth, Carlos A.....	Millfield.....	51 E. C.

PREPARATORY DEPARTMENT.

THIRD YEAR.

Breese, Claude.....	McConnellsville	Brown House.
Cotton, Albertus.....	Lee	Mr. J. P. Wood's.
Eves, E. H.....	Louisa, Ky.....	41 E. C.
Hanley, Abram L.....	Dumontville.....	Mr. H. Roach's.
Hanna, Julia Ann.....	Alice.....	Mrs. Cochran's.
Hanna, Emma Damaris.....	".....	"
Henry, John L.....	".....	Mr. Chas. Henry's.
Humphrey, Shepherd S.....	Coolville	77 W. C.
Jennings, Ralph.....	Athens.....	Mr. C. E. M. Jennings's.
Junod, Dwight A.....	Grosvenor.....	39 E. C.
Logan, Ella F.....	Athens.....	Mr. H. Logan's.
Mathias, Jennie C....	".....	Mr. H. R. Mathias'.
McAdams, Frank.....	".....	77 W. C.
Mauck, Rosce Jay.....	Cheshire	52 E. C.
Maxwell, George H....	Athens.....	Brown House.
Penrose, Edith.....	Pennsville.....	Mr. T. H. Craig's.
Rowland, George H.....	Hamden Junction..	50 E. C.
Scott, Guy.....	Athens.....	Mr. W. Scott's.
Tinker, Elisha A.....	Jacksonville	39 E. C.
Tinker, Lewis A.....	".....	39 E. C.
Von Scio, Marion W.....	Quaker City.....	41 E. C.
Wells, Kate.....	Middleport.....	Mr. Woodyard's.
Wood, Daniel A.....	West Cairo.....	34 E. C.

SECOND YEAR.

NAMES.	RESIDENCE.	ROOM.
Aikin, Minnie E	McArthur	Mr. Geo. Kaler's.
Alexander, Jennie S	Thurston	Mr. W. A. Thomas'.
Baker, Rawlins M.....	Athens.....	Col. Baker's.
Brown, Fannie B	"	Mr. L. Brown's.
Bush, Fred. W	Marshfield	36 E. C.
Beery, Clyde F	North Berne.....	39 E. C.
Bean, Attie J	Pleasanton	Hon. A. G. Brown's.
Beard, Mary E.....	Salina	Mrs. Smith's.
Beckett, James N	Commercial Point....	Mrs. Pilcher's.
Black, Anna M	Buchtel	Mr. W. McVay's.
Clutter, William J	Marshfield	46 E. C.
Embree, Nathan N.....	Plantsville.....	52 E. C.
Ginn, John W	Stewart	38 E. C.
Hastings, Reuben C. M.....	Athens.....	Mr. W. Hastings'.
Hewitt, Tryphena.....	Mineral City.....	Mrs. H. Howe's.
Holcomb, Howard K.....	Dearbourn	Mr. H. Roach's.
Hazen, Ida B	Whipple	Mr. J. H. Guitteau's.
Irwin, Jennie D.....	Greenfield	Judge Welch's.
Junod, Elton	Gloster.....	37 E. C.
Hatzenbach, William	Nelsonville.....	Mr. Burchfield's.
Lash, Morrison Rice	Athens.....	Dr. Lash's.
Lefever, W. F. Errett	Bishopville	49 E. C.
Lively, Alonzo G	Jackson C. H.....	33 E. C.
Main, Henry T	Ashley	Mr. H. Crippen's.
Mathews, Carrie A.....	Pleasanton	Mr. Bratton's.
McPherson, William B.....	Jasper	Brown House.
Moore, Mary A	Hibbardsville.....	Mr. Bratton's.
Patterson, Lewis A.....	Athens	At Home.
Penrose, Mahlon.....	Pennsville	Mr. T. H. Craig's.
Scholl, Alfred N	Joe	Mr. Yontz's.
Seeds, Jesse E	Commercial Point....	Mr. Geo. Kaler's.
Simms, Charles M.....	Carbondale.....	47 E. C.
Walter, William M.....	Enterprise	73 W. C.
Wilson, Elmas L.....	Marshfield.....	Mrs. Cochran's.

FIRST YEAR.

Baker, Blanche E.....	Athens.....	Mr. Yontz's.
Barton, Howard G	Ilesboro	Mr. W. S. Barton's.
Biddle, John S.....	Athens	76 W. C.
Bethel, Wesley	Nelsonville.....	Brown House.
Blackstone, Frank H.....	Athens	Mrs. Blackstone's.
Blackburn, Lizzie	"	Mr. Kiltan's.
Boyd, Everett	Lewisville	Mrs. Boyd's.
Brown, Will G.....	Athens.....	Mrs. L. Brown's.
Carlton, Emma R.....	Coolville	Brown House.
Cornell, Queenie E	Athens.....	At Home.
Crossen, Huston N.....	Hibbardsville.....	44 E. C.
Davis, Wilmer E.....	Hamden Junction ...	Mr. H. Wright's.
Dunlap, Della	Athens.....	Mr. Calvert's.
Elder, Florence	Nelsonville	Hon. C. S. Welch's.
Evans, William M	Athens.....	Prof. Evans.
Finsterwald, Roma.....	"	"
Green, Zouria W.....	Ashley	Mr. H. Crippen's.
Gift, Julian.....	Hibbardsville..	71 W. C.

NAMES.	RESIDENCE.	ROOM.
Growdon, James T.	Waller	40 E. C.
Handerhan, John A	Marietta	72 W. C.
Hawk, Benjamin F	Athens	74 W. C.
Haskisson, Lillie.....	Cheshire	Mr. Hobson's.
Hewitt, Dora	Mineral City.....	Mrs. Howe's.
Jones, Ralph H.....	Athens	Mr. W. Jones'.
King, Curtis Walden.....	Cheshire ..	Mr. Hobson's.
Kinnison, Ulysses S.....	Jackson C. H	"
Kline, Harvey J	Athens	Mr. C. Kline's.
Lewis, Ida May	Bishopville	Mr. L. A. Koon's.
Linely, Lorenzo D	Jackson C. H.....	33 E. C.
Lowe, Jessie	Canaanville	Mrs. H. Howe's.
Larch, Hoit.....	Athens	Dr. Stimson's.
McIntire, William	Chillicothe	Brown House.
McLean, Charles R	Washington C. H....	Mr. C. McLean's.
Morrison, William B	Athens	Mr. E. Morrison's.
Norris, Edward G.	"	Mr. Chas. Norris's.
Norton, Bertie S	"	Maj. Norton's.
Perry, Isaac C	Glen Ebon.....	49 E. C.
Pilcher, Hastings M	Athens	Mrs. Pilcher's.
Sanner, Ida.....	Union Furnace	Mr. Swett's.
Smith, Samuel B.....	Ringgold	40 E. C.
Stewart, Lizzie J.....	Nelsonville.....	Mrs. S. Young's.
Super, Frank H.....	Athens	Pres. Super's.
Wakefield, George	Hibbardsville.....	71 W. C.
Wiehr, Amy.....	Athens	Mr. J. Wiehr's.

UNCLASSIFIED.

Bickel, Harrison C	Hill Grove	Brown House.
Brashears, Mary L	Athens.....	Mr. J. Graham's.
Cullums, Jessie F.....	"	At Home.
Grosvenor, Constance S	"	Gen. Grosvenor's.
Grosvenor, Emma	"	"
Hoffman, Dora	Amesville	Mr. W. McVay's.
Hamilton, Anna	Athens	Gen. Hamilton's.
Lee, H. Eva	Stella	Mr. Bayard's.
Shires, Jessie	Jimes	Mr. T. H. Craig's.
Townsend, Helen	Athens	Maj. Townsend's.
Wright, Noah J.....	Trimble	Brown House.

POST-GRADUATE STUDENTS.

Baker, Murtland C.....	Athens.....	Col. Baker's.
Hildrup, Hattie S	Chicago	Mr. J. Lash's.

PREPARATORY DEPARTMENT.

FIRST YEAR—FIRST TERM.

<i>Classical Course.</i>	<i>Philosophical Course.</i>	<i>Pedagogical Course.</i>
Latin, Grammar and Reader.	Same as Classical Course.	Same as Classical Course.
English, Grammar and Com- position.		
Arithmetic.		

SECOND TERM.

<i>Classical.</i>	<i>Philosophical.</i>	<i>Pedagogical.</i>
Latin, Grammar and Reader.	Same as Classical Course.	Same as Classical Course.
English, Grammar and Composition.		
Geography, Political and Descriptive.		

THIRD TERM.

Viri Romæ.	Same as Classical Course.	Viri Romæ.
English, Analysis and Composition.		English, Analysis and Composition.
Geography, Physical.		Geography, Physical and Astronomical.

SECOND YEAR—FIRST TERM.

Viri Romæ.	Viri Romæ.	Same as Philosophical Course.
Greek, Grammar and Reader.	Elementary Physics.	
History of the United States.	History of the United States.	

SECOND TERM.

Viri Romæ and Cicero's 1st oration against Catiline.	Viri Romæ and Cicero's 1st oration against Catiline.	Viri Romæ and Cicero's 1st oration against Catiline.
Greek, Grammar and Analysis begun.	Elementary Physics.	Elementary Physics.
History of England.	History of England.	History of England.

THIRD TERM.

Catilinarian Orations, II, III, IV.	Catilinarian Orations, II, III, IV.	Catilinarian Orations, II, III, IV.
Greek, Grammar and Analysis.	German, Grammar and Reader.	Civil Government.
Algebra, begun.	Algebra, begun.	Algebra, begun.
		Elementary Chemistry.

THIRD YEAR—FIRST TERM.

Cicero's Oration, Pro Archia, Marcello and 1st Philippic.	Cicero's Oration, Pro Archia, Marcello and 1st Philippic.	Psychology, History of Education, Methods, etc.
Anabasis, three books.	German Reading and Conversation.	Physiology.
Algebra.	Algebra.	Algebra.

SECOND TERM.

The Æneid, books I, II, III.	The Æneid, books I, II, III.	Psychology, History of Education, Methods, etc.
Homer's Iliad.	German, Continued.	Political Economy.
Algebra.	Algebra.	Algebra.

THIRD TERM.

The Æneid, books IV, V, VI.	The Æneid, books IV, V, VI.	Psychology, History of Education, Methods, etc.
Homer's Iliad, three books.	German, Continued.	Botany.
Plane Geometry.	Plane Geometry.	Plane Geometry.
English, Rhetoric.	English, Rhetoric.	English, Rhetoric.

Reading in connection with the study of English Literature and Elocution, and the making of abstracts with special reference to English composition will be required to a greater or less extent throughout the entire course. We expect our graduates to read well and understandingly, to write English correctly, and to have a fair elementary knowledge of English Literature. Students in the pedagogical courses will also be required to teach under competent supervision during their connection with the institution. The study of the natural sciences will be made practical as far as possible. The construction of simple apparatus will be so taught that even the teachers in the country schools who have had the benefit of this instruction can illustrate the most important laws of physics and chemistry.

It is claimed that the pedagogical course above laid down embodies the smallest amount of knowledge and practical experience that the teacher ought to possess before he or she is competent to take charge of any school-room.

COLLEGIATE DEPARTMENT.

FIRST, OR FRESHMAN YEAR.

FALL TERM.

<i>Classical.</i>	<i>Philosophical.</i>	<i>Pedagogical.</i>
Cicero de Senec. et de Am.	Cicero de Senec. et de Am.	U. S. History.
Herodotus.	French—The Grammar.	A Foreign Language.
Solid Geometry.	Solid Geometry.	Solid Geometry.
		Vocal Music.

WINTER TERM.

Livy.	Livy.	A Foreign Language.
Xenophon's Memorabilia.	French—Reading and Con-	U. S. History.
Algebra completed.	versation.	Algebra completed.
	Algebra completed.	Vocal Music.

SPRING TERM.

Odes of Horace.	Odes of Horace.	A Foreign Language.
Plato's Apology and Crito.	French — History or an	U. S. History.
Plane Trigonometry and	equivalent.	Plane Trigonometry and
Surveying.	Plane Trigonometry and	Surveying.
	Surveying.	Vocal Music.

SECOND, OR SOPHOMORE YEAR.

FALL TERM.

Epistles of Horace.	Epistles of Horace.	A Foreign Language.
The Birds or Clouds of Aris-	German—Reading, Etymol-	History of England.
tophanes.	ogy and Synonyms.	Spherical Trigonometry.
Spherical Trigonometry.	Spherical Trigonometry.	Physiology.
Physiology.	Physiology.	

WINTER TERM.

<i>Classical.</i>	<i>Philosophical.</i>	<i>Pedagogical.</i>
Germania and Agricola.	Germania and Agricola.	A Foreign Language.
Greek Tragedy.	German, same as Fall term.	History of England.
Analytical Geometry.	Analytical Geometry.	Analytical Geometry.
Rhetoric.	Rhetoric.	Rhetoric.

SPRING TERM.

Juvenal.	Juvenal.	A Foreign Language.
Demosthenes.	French—Reading, Etymol-	English Literature.
Calculus.	ogy and Synonyms.	Botany.
Botany.	Calculus.	Logic.
	Botany.	

THIRD, OR JUNIOR YEAR.

FALL TERM.

Mechanics.	Mechanics.	A Foreign Language.
Physics.	Physics.	Physics.
English Literature.	English Literature and Phi-	English Literature.
German — Grammar and	lology.	Psychology and History of
Reader.		Philosophy.
		History of Education.

WINTER TERM.

Chemistry begun.	Chemistry begun.	Chemistry.
Physics, continued.	Physics, continued.	Physics.
Political Economy.	Political Economy.	A Foreign Language.
German—Reading and Com-	English Literature and	English Literature.
position.	Philology.	Psychology and History of
		Education.

SPRING TERM.

Chemistry, continued.	Chemistry, continued.	Chemistry.
Physics, continued.	Physics, continued.	Physics.
Political Economy.	Political Economy.	A Foreign Language.
German—Reading and Con-	German—Reading and Con-	English Literature.
versation.	versation.	Psychology and History of
English Literature.	English Literature and Phi-	Education.
	lology.	

FOURTH, OR SENIOR YEAR.

FALL TERM.

<i>Classical.</i>	<i>Philosophical.</i>	<i>Pedagogical.</i>
Logic. Psychology.	Logic. Psychology.	A Foreign Language.
Chemistry, continued.	Chemistry, continued.	Chemistry.
English Literature.	English Literature.	Political Economy.
		English Literature.
		History of Philosophy.
		History of Education.

WINTER TERM.

Classical.

Ethics. Psychology.
Laboratory Practice.
Astronomy.

Philosophical.

Ethics. Psychology.
Laboratory Practice.
Astronomy.

Pedagogical.

A Foreign Language.
Ethics.
English Literature.
Laboratory Practice.
History of Philosophy.
History of Education.

SPRING TERM.

History of Philosophy.
Constitution of the United
States.
History of Civilization.
Geology.

History of Philosophy.
Constitution of the United
States.
History of Civilization.
Geology.

A Foreign Language.
English Literature.
Constitution of the United
States.
Geology.
History of Philosophy.
History of Education.

The pedagogical course is arranged with special reference to the fact that the teacher needs, first of all, to be familiar with the history and literature of his country, and with their relation to that of the mother country. History will be taught as consisting of a great deal more than a mere succession of events. The reciprocal influences operative between constitutional law and public opinion, and the effect that each produces upon the other will be constantly kept in view in studying the history of the United States as well as that of England.

At least one foreign language must be pursued through the whole course. If a modern language, it must be studied not less than one year; if an ancient language, not less than two. The basis of this study is the two years of preparatory Latin. A limited amount of interchange between the three courses will be permitted in those studies that are not essential to any particular course. A limited number of electives will also be placed at the option of the student; but he will in some degree be guided in his choice by the advice of the Faculty. The amount of required work will average from fifteen to nineteen hours per week, and may vary slightly with different classes. The amount of work laid down for the pedagogical course is, therefore, no greater than for either of the other courses.

Rhetorical work in English is required throughout the entire course, and much stress is laid upon this part of the student's work. In Greek, some portion of the New Testament and Greek History are required in addition to the above; in connection with Latin, Roman History. A fuller statement in regard to all departments will be found in another part of this catalogue.

OHIO UNIVERSITY.

ORIGIN OF THE UNIVERSITY.

The existence of the Ohio University was provided for as early as 1787, in the purchase made from the Government of the United States by the Ohio Company of Associates. By the contract between these two parties, two townships of land were set apart for the purpose of a University, and placed under the care of the Legislature of the State. The University was organized under an act of the Legislature passed in 1804. Its Trustees are appointed by State authority, and the Governor of the State is *ex-officio*, a member of the Board.

LOCATION.

Athens, the seat of the University, is situated in the southeastern part of the State. It is easily accessible from the east and west by the Cincinnati, Washington & Baltimore Railroad and its branches; from the central and northern portions of the State by the Columbus, Hocking Valley & Toledo, and Kanawha & Ohio Railways. By these routes it is about one hundred and sixty miles east from Cincinnati, and seventy-five miles southeast from Columbus.

The lover of natural scenery cannot fail to be charmed with its picturesque surroundings. The winding valley of the Hockhocking and the wooded hills beyond, present a series of lovely views from the University, while the wide prospects, as seen at certain seasons from some of the neighboring summits, are seldom surpassed in quiet and varied beauty.

The site of the University buildings is a spot of unusual attractions. The buildings occupy a slight elevation extending east and west across the grounds. On the north front lies a park of about four acres, which contains a grove of fine forest trees, skirted along its northern limit by a row of magnificent elms. That portion of the grounds lying in the rear of the buildings is set apart for recreation.

THE BUILDINGS.

These are four in number. The main building was erected in 1817, and is the oldest college edifice, as the University itself is the oldest

institution of learning, northwest of the Ohio river. This venerable structure, made dear to many by a thousand strong and tender associations, and to many more by the names of eminent men who have studied or taught within its walls, has recently been remodeled, and, while retaining the same general proportions, is, to all intents, a new building. It is admirably planned and well finished. With its slate roof and massive cornice, its lengthened windows and handsome colors, its convenient arrangement and pleasant appointments, it will compare favorably in appearance and in adaptation to its purpose, with most college buildings in the west.

The two wing buildings contain the dormitories, and will accommodate about sixty students. The rooms afford cheap and comfortable lodgings for young men who, for any reason, prefer dormitory life to residence in a family. The west wing contains, also, a preparatory recitation-room. The room for many years used as a chapel has been provided with suitable furniture, and is now occupied as a school-room.

The new building stands on an eminence at the western side of the campus. In design it is unique and elegant; the material is brick, with cut-stone trimmings. Its dimensions are forty feet in width by seventy-six feet in length, and two stories in height. It has two fronts, one on the west, towards Court street, which is the principal street in the town, and one on the east, towards the main building. The first floor contains the chapel or assembly hall, two corridors and stairways, and a waiting-room. The second floor contains two society halls, with a committee-room attached to each. The building has been occupied since the fall of 1883.

COURSES OF STUDY.

Such courses of study have been adopted as experience has proved to be best adapted to the purposes of liberal education. The classical course, in fullness and arrangement, will compare favorably with that of the best institutions. The philosophical course is so arranged as to meet the wants of those who may prefer to study modern language and English branches instead of Greek, for which French, German and English are substituted.

The pedagogical course is intended to fit young people for the profession of teaching. A fuller statement of its aims and methods will be found in another part of this report.

Those who are able to attend for a short time only may take a select course, provided the studies they wish to pursue are such as they are qualified to take up with advantage. But no student will take a study

to which he has not been assigned, or discontinue a study, without permission obtained from the faculty.

No students, except Seniors, and those taking a select course, are permitted to recite in the Senior studies of the third term, and the Senior examinations of the third term are limited to the regular Senior studies of that term.

LIBRARY AND READING-ROOM.

The several libraries connected with the University have been combined and placed under one management, for greater convenience. The number of volumes exceeds seven thousand, of which about fifteen hundred are new. The united library affords to students the means of reference to standard authorities in almost every department of knowledge, and an opportunity to become acquainted with the best literature of the present and former times. The reading-room is supplied with about fifty periodicals—American, English, German and French. It is open daily for reading and reference, thus affording to students the means of maintaining a general acquaintance with current questions and events, as well as with the literature and science of the day. The most important books of reference are also kept in the reading-room, where they are always accessible. The library and periodical lists are growing from year to year. The societies have a fund for this purpose, and the Legislature makes annual appropriations.

APPARATUS AND CABINET.

Much valuable apparatus has been procured for the various departments of mathematics, astronomy, physics and chemistry; and these subjects are illustrated by experiments. A new chemical laboratory has been provided, which contains working tables supplied with gas and water, and affords every facility for practical work.

Several thousand dollars of recent State appropriations have been expended in the purchase of apparatus for the department of chemistry and physics. In the selection, special reference has been had to laboratory work by the students themselves. Additions are being constantly made to the apparatus. A fine set of surveying instruments of the most approved kind has recently been purchased for the use of students in field work. The cabinet affords important aid in the study of mineralogy and geology. But we are greatly in need of further contributions thereto, and to this end the assistance of the friends of the institution is greatly desired and earnestly solicited.

LITERARY SOCIETIES.

There are two literary societies in the University—the Athenian and the Philomathean. The members have opportunity to exercise themselves in declamation, composition and debate, and to become familiar with the modes of conducting business in deliberative assemblies. The work of these societies forms a valuable part of college training.

The new halls, on the second floor of the chapel building, are now completed and occupied. They are convenient, symmetrical, tasteful and elegant. The members of the societies have been able, by the generous aid of former members, to furnish them in a manner befitting the place and the purpose.

LECTURES.

A course of lectures is delivered every winter by members of the faculty and other persons on subjects of general interest. These lectures are a means of much useful and interesting information. The following list contains the lectures and their subjects for the present year: Supt. John Hancock, "Shakespeare;" Supt. Elmer S. Cox, "Emerson;" Supt. J. J. Burns, "The Reading Habit;" Mr. John P. McLean, "The Conquest of Mexico," and "The Wonders of Geology;" Dr. W. H. Venable, "The Humor and Pathos of School Life;" Mr. Edward H. Bemis, of Springfield, Mass., six lectures on economic subjects; Prof. Albert H. Tuttle, "The Great Scientists."

METHODS OF INSTRUCTION.

Instruction is given both by recitation and lectures. The constant aim in both is to awaken interest in study, to aid in the acquisition of knowledge, and to develop the powers of thought and communication.

Lectures are delivered by the Professor of physiology during the second term on psychology, and during the third term on the history of philosophy; by the Professors of ancient classics on the language, literature and history pertaining to that department; and by the Professor of natural science on chemistry, geology and astronomy.

The classes in botany and geology make excursions into the surrounding country, in order to collect specimens and derive scientific knowledge from original sources. The class in surveying has practice in the use of instruments by actual work.

ADMISSION.

Applicants for admission must present satisfactory testimonials of good character; and students coming from other colleges must present certificates of honorable dismissal.

Examinations for admission are held on the day preceding the beginning of the college year, and on the first day of the second and third terms of the year. Candidates will, therefore, please govern themselves accordingly.

Candidates for advanced standing are, in all cases, examined to ascertain their thoroughness and proficiency; but certificates from other institutions will be accepted for the *amount* of work done in the classics.

In exceptional cases students are admitted to classes for a few weeks on trial without examination, provided the Professors in charge are reasonably certain that they can maintain their standing.

Ladies are admitted to all departments of the University on the same terms and under the same conditions as those prescribed for young men.

Students who have done the full amount of prescribed work in the preparatory department, except the Greek, will be admitted to the Freshmen class; this can be taken afterward, and the course leading to A. B. completed in the usual four years.

DISCIPLINE.

Entering the University will be considered a pledge to obey its rules and regulations. These are few and simple, appealing to the student's self-respect and sense of personal responsibility.

A record is made of the daily work of each student. When the standing of the student, as shown by this record and examination, falls below a certain mark, he must review the study.

Records are also kept of each student's deportment. A low standing on either record is followed by private admonition, and notice is given to the parent or guardian.

Whenever the conduct of a student is such as to indicate that he is unfit to be a member of the University, either because of immorality or because of habitual neglect of his college duties, he will be dismissed. But, in the latter case, his parents will first be requested to withdraw him, and if not withdrawn within a reasonable time, he will be dismissed.

RELIGIOUS INFLUENCE.

Students are required to be present at prayers in the chapel every morning, unless excused by the Faculty, and to attend public worship

on the Sabbath; but the choice of the place of attendance is left with the student or his parents. A students' prayer-meeting is held once a week, at which attendance is optional. The University is not sectarian, and no effort is made to inculcate the doctrines of any particular creed or denomination; but the utmost care is taken to promote sound and healthy religious sentiments.

DEGREE. S.

The degree of Bachelor of Arts is conferred on those who finish the entire classical course and pass satisfactory examinations. The fee is ten dollars.

The degree of Master of Arts is conferred, on the payment of ten dollars, upon every Bachelor of Arts of three years' standing, who has sustained a good moral character and has pursued professional or scientific studies during that period. The application must be made in person or by letter at least one day before commencement.

The degree of Bachelor of Philosophy is conferred on those who complete the philosophical course.

The degree of Master of Philosophy is conferred on Bachelors of Philosophy of three years' standing, on the same conditions as those for the degree of Master of Arts.

EXPENSES.

Tuition in preparatory department, per term	\$6 00
Tuition in college department, per term.....	10 00
Contingent fee in either department, per term.....	3 00
Rent of room in University, if taken, per term.....	\$4 to 6 00
Tuition per year in the preparatory department, if paid in advance	15 00
Tuition per year in the collegiate department, if paid in advance	25 00

All tuition bills must be paid during the first thirty days of the term. No exceptions can be made to this regulation.

A fee of one dollar is charged for all private examinations, except for entrance, unless the candidate is excused by a vote of the Faculty.

One student from each county of the State is admitted free of charge for tuition. Any one desiring to have the benefit of a county scholarship, must receive his appointment from the auditor and commissioners of the county, and obtain from them a certificate stating that he is of good moral character and an actual resident of the county from which he is sent.

All students, whether they hold a scholarship or not, are charged room rent and contingent expenses, and are held liable for any damage that may be done to their rooms.

Board can be obtained within a convenient distance of the University at \$2.75 per week. By forming clubs, students may board at \$1.75 per week. Those students whose circumstances require it are allowed to board themselves, by which means their expenses may be still further reduced; but this plan is not recommended, because liable to be prejudicial to health.

The actual cost of an education at the University will depend very much upon the disposition and habits of the student. The necessary cost is very low—as low as at any other institution affording equal advantages. It is earnestly recommended to parents not to furnish their sons or daughters with extravagant means. The scholarship and character of a student are often injured by a free indulgence in the use of money. Whatever is beyond a reasonable supply exposes him to numerous temptations and endangers his success and respectability.

ELECTIVES.

Considerable choice will be allowed to students at the end of the Sophomore year; a few studies are optional even earlier in the course.

All the Greek and all the Latin of the Sophomore year is optional. Two terms of English Literature are required in the Classical and Philosophical course; in the Pedagogical course one additional term of American Literature is required. But one term of the History of Philosophy and one term of Psychology will be required of the students in the two former courses, but the Pedagogical course must be followed as laid down in the scheme. No mathematics will be required after the first term of the Sophomore year, except of those who take advanced Physics. One term of Physics, one term of Chemistry, and one term of Laboratory practice is elective. An additional term of Astronomy may be taken instead of Geology. It is to be noted, however, that these electives are not offered wholly without conditions. A proper reference of studies must be kept in view. Regard will also be had to the time at the disposal of the teacher, and to the number of students taking any particular elective. In all cases the student is required to give notice to the President, during the preceding term, of the elective he wishes to take; and he is advised to select two or more in the order of his preference, so that when it is found impossible to provide for the first choice, the second or third in order may be considered. All regular students will be required to take not less than sixteen hours of class

work per week. Further information may be found under the several departments.

POST-GRADUATE STUDIES AND DEGREE.

The degree of Ph. D. will be conferred on persons who give evidence to the faculty of possessing conspicuous scientific attainments. Such evidence may consist either in the written or printed work of the candidate, or in the examinations which he undergoes before the faculty, or both. A thesis will in all cases be required; and it must be submitted at least six weeks before commencement. Great stress is laid upon the fact that no mere mastery of other men's labors, however complete, will entitle the candidate to a degree. He must give evidence of possessing not merely a good measure of natural ability, but that kind of scientific training which qualifies him to be an original investigator in his chosen department. Further particulars will be given upon application to any member of the faculty.

DETAILED STATEMENT OF THE DEPARTMENTS OF INSTRUCTION.

POLITICAL SCIENCE.

PRESIDENT SUPER.

Instruction in Political Economy and the Principles of Civil Government will hereafter be given, both in the collegiate department and in the pedagogical course of the preparatory department. The former of these two branches is studied by the Juniors, who recite it three hours a week during the second term, and two hours a week during the third term. President Chapin's recent edition of Wayland's Political Economy is the book used in class, though it serves for little more than the definition of terms, and to indicate the order in which the various branches of the subject will be considered. The increased attention now given to this theme by the public, the numerous books and popular articles that are constantly coming from the press, and especially its relation to the larger subject of sociology, renders unprofitable the use of a text-book to any great extent. Yet the standards, as we may call those works that have laid the foundations of political economy, are frequently referred to, and the methods of investigation discussed either with dissent or approval. A right understanding of the questions arising from the subjects connected with this department is regarded as of the highest moment to those who will hereafter become members of the body politic; and no pains are spared to equip them for a right understanding of the social problems in the solution of which they may hereafter be called upon to assist.

The *Constitution* of the United States is studied by the Seniors in the third term. Its growth and development, and especially its relation to that of England are made prominent subjects of investigation. Andrews' Manual is used as a general guide, but Cooley's Principles of Constitutional Law, Hallam's Middle Ages (chapter VIII), Hallam's Constitutional History of England under index titles, "Constitution" and "Constitutional Law," Lieber's Civil Liberty and Self-Government, and other standard works are used for reference.

MATHEMATICS AND ASTRONOMY.

PROFESSOR HOOVER.

The course in pure Mathematics embraces ten terms, distributed as follows: Algebra, 4 terms; Geometry, 2 terms; Trigonometry and Surveying, 2 terms; Analytic Geometry, 1 term; Calculus, 1 term. Of these, four terms, including Algebra to Series and Plane Geometry, are required for admission to the Freshman class; the remaining six terms are included in the College Department, covering the Freshman and Sophomore years.

In teaching the pure mathematics, especial attention is directed to the value of the study as a means of training the logical faculties. Constant stress is laid upon the steps of reasoning which underlie the various processes; and it is insisted that the principal business of the college student of mathematics is to apprehend these clearly. The power to apply the principles is tested by a wide range of exercises drawn from various sources and adapted to the capacity of the student.

A part of the Spring term in the Freshman year is devoted to the subject of land surveying and to other applications of Trigonometry. This work is important as giving good examples of the vast utility of mathematical science in its practical applications. The department is in possession of an excellent set of surveying instruments, including a transit, level, rod, and other necessary appurtenances. These are in frequent use by the students. Post-graduate work, as follows, is now offered: Differential equations, two terms, three hours per week; Mathematical Optics, one term, three hours per week; Astronomy, two terms, two hours per week; Least Squares, one term, two hours per week; Quaternions, one term, three hours per week. Some students have already availed themselves of this opportunity to do advanced work in mathematics.

GREEK.

PROFESSOR SUPER.

It is the aim of this department not only to teach students to read the authors commonly read in colleges, but also to make them acquainted as far as possible with the literature and life of the ancient Greeks. In teaching the language, especially that of Homer, constant attention is called to the words related to other languages, particularly Latin, German, and English, and the laws of consonantal mutation are explained. Especial prominence is given, as the student progresses, to

the following points: First, forms; second, vocabulary; third, relation to cognate languages; fourth, literature and history. The ear is regarded as equally important with the eye in the interpretation of words. When possible, some entire work of an author is read, as it is thought a more lasting and more satisfactory impression will thus be made upon the mind of the student than by the use of selections only.

It is a well established principle in the study and teaching of the ancient languages that they should be made as far as possible, the basis of a study of antique life. The Greek language embodies the experience of the most remarkable people of antiquity, a people whose achievements in literature, in the arts and in government have been, and doubtless will ever continue to be, inexhaustible sources of profitable instruction. It is here claimed that a study of the Greek language, together with all that should properly be taken in connection therewith, will contribute the most important element of a liberal education.

Before admission to the college class in this department, the student must be fairly familiar with the Greek grammar, and have read three books of the *Anabasis* and three books of Homer's *Iliad*.

During the past year the Freshmen read about one hundred pages of Herodotus in Goodwin's Greek Reader, nearly the same number of pages in Winans' edition of Xenophon's *Memorabilia*, and the *Apology* and *Krito* of Plato entire.

The Sophomores read the *Clouds* of Aristophanes, the *Agamemnon* of Aeschylus, excepting some portions of the chorus, and three hundred chapters of the *De Corona*. The same Greek text is not generally read during two successive years.

Works of reference: Hadley's and Goodwin's Greek Grammars, Goodwin's Greek Moods and Tenses, Liddell & Scott's Greek Lexicon, Anthon's and Smith's Classical Dictionaries, Autenreith's Homeric Dictionary, Ginn & Heath's Classical Atlas.

Students who wish to pursue the study of Greek beyond the regular course can be accommodated with three exercises per week for three terms. The subjects to be studied or the authors to be read to be selected by the professor. One term can also be given to the Introduction to Comparative Philology.

PEDAGOGICS.

PROFESSOR GORDY.

It is the aim of this department to prepare students for the profession of teaching. Such preparation requires (1) a vivid conception of the true end of education; (2) a knowledge of, and practical acquaint-

ance with, the right method to be used in attaining that end; (3) a knowledge of the principles upon which those methods are based; (4) a true conception of education values; (5) a broad range of scholarship and general culture. Every opportunity is improved to impress upon students the fact that the object of education is not primarily the communication of knowledge, but the training of faculty, and these faculties not merely or chiefly the intellectual, but the emotive, the volitional, and the moral. It is a prominent object of instruction in the history of education to make the history of nations illustrate on a grand scale the fact that defective and stunted types of civilization are largely due to false educational ideals. The belief is that students will be helped in this way as they can be in no other, to a true conception of what education should be, and to a realization of its transcendent importance. It is an equally prominent object of instruction in the history of education to help students to gather from the theories of the great educational reforms those principles which may fairly be claimed to have universal validity, and to have a place in the science of pedagogy. And as far as practicable, students are sent to the masterpieces of these educational reformers rather than to digests of their theories. Thus Plato's "Republic," Pestalozzi's "Gertrude," Rousseau's "Emile," and Spencer's "Education" are critically examined in this course. And as a further preparation for the science of education, psychology is studied with great care. And after a careful and critical study of the history of education and psychology has familiarized students with the true idea of education and the principles upon which intelligent efforts to attain it must be based, instruction is given in the science of education—which is but the systematic and orderly statement of the principles with which at that point students are already familiar—and also in methods; and as far as possible the practical acquaintance of students with methods is tested by having them teach under the direct supervision of the university.

If the primary end of education is development of faculty rather than the communication of knowledge, the question which Spencer regards as first in logical order in the theory of education, "What knowledge is of most worth?" is not first or even second. The question is, What faculty is of most worth? What stress shall be laid upon the culture of the various faculties of the mind in order to attain the true end of education, the symmetrical development of the entire man? And the second is, What is the education value of the various studies in the curriculums of our schools and colleges? In other words, What is their capacity, when rightly studied, to contribute to this end? This is deemed an important part of the theory of education, and the attempt

is made to give students so definite an idea of it as its great difficulty and complexity admit.

And no opportunity is neglected to impress upon students the fact that the highest success possible to the teacher cannot be obtained by the pedant, however scholarly he may be, and however profoundly he may have studied the science and art of education. The effort is constantly made to make them feel that to succeed as teachers, they must be men with a broad range of sympathies, interested in all that concerns men.

For the present, Psychology, Ethics and the History of Philosophy will be regarded as belonging to this department. Students have also the privilege of taking Logic three terms, two hours per week, and Metaphysics the same.

RHETORIC AND ENGLISH LITERATURE.

PROFESSOR SUDDUTH.

The intention is to make the study of Rhetoric subserve not only the practical purposes of forming a correct style in composition, but also to make it the basis of a critical study of English literature. To this end, after some preliminary study of the general principles of Diction and Construction, the student goes directly to the works of the masters in the several departments of Description, Narration and Exposition, studies their models, and strives to analyze their methods. The results of these studies are compared and discussed in the class-room, are embodied in theses, written by the students, and are finally put to the test in the work of real composition.

The Freshman and Sophomore classes meet weekly for rhetorical work. Two themes per term are required from each member of the Junior and Senior classes. The Juniors and Seniors read their production before the college.

The foundation for the work in English Literature is laid in the study of Rhetoric, and the same method substantially is pursued. The object is to make available in the class-room the rich resources of this literature, both for discipline and for culture. The students read critically standard literature of the present and past. They compare and discuss in class their respective estimates of both the style and the content of individual authors, and from this work they deduce the conclusions which they afterwards elaborate into formal critiques, to be again presented to the class, and discussed and compared with the judgments of authoritative literary critics.

The work of the department is concluded with a historical survey,

in order of time, of the various fields and epochs passed over during the course of study, thus unfolding to the student the process of the germination and growth of the literature of his native tongue.

The following chronological grouping of the principal authors studied in the course may be of service to the student in guiding him in his reading, and in selecting books to bring from home :

I. Chaucer and Early English.

II. Spenser, Shakespeare and Bacon.

III. Milton, Addison and Swift.

IV. Wordsworth and Keats; Johnson, Burke and Lamb; Goldsmith, Scott and Irving.

V. Longfellow and Tennyson; Carlyle, Macaulay, Emerson, Ruskin and Mathew Arnold; Hawthorne, Thackeray and Dickens.

The following electives are offered in this department :

(1). Anglo Saxon—Sweet's Reader.

(2). Dramatic Literature—Schlegel.

Works of reference—Taine's History of English Literature, Richardson's History of American Literature, Morris' Historical Grammar, Morris' Specimens of Early English, and Skeats' Etymological Dictionary.

NATURAL SCIENCE.

PROFESSOR MEES.

The instruction in this department is designed to cultivate in the student habits of observation, power of generalization, to give him a general knowledge of the methods employed in the study of natural phenomena, and to suggest the practical application of the information thus gathered. The course is so arranged as to give the students a thorough introduction to representative Physical and Biological Sciences, it being deemed wiser in an elementary course to confine their attention to a few sciences in which thorough work can be done than to attempt to make them acquainted with all the subdivisions usually included in curricula.

Physics.—In the Preparatory department, one term is devoted to Elementary Physics, comprising Laboratory practice, Recitations from text-books and Lectures on special subjects, such as Units, Physical Constants, etc. This course will, in addition to laboratory experience gained by students, be fully illustrated by experiments—an excellent assortment of apparatus being available.

In the Pedagogical course the character of the work is modified to suit special requirements. Students are required to give lessons to the

whole class illustrating all principles by apparatus constructed by themselves.

In the Junior year, the more advanced study is continued through the three terms—Daniell's text-book being used as a guide, supplemented by lectures on Applied Physics. Our laboratories are supplied with the best apparatus for illustration as well as research—additions are annually made. The electric light plant is now in perfect operation, and we feel that the University offers exceptional opportunities for the study of Physical Science. Candidates for a degree who begin the study of Physics will be compelled to continue it throughout the three terms. As electives and Post-graduate work we offer special courses in Physical Optics, Physical and electric measurements, Acoustics, the Physical and Physiological Theory of Music.

Chemistry.—The work in the Preparatory department is of the same general nature as in Physics. The students enter the laboratory and begin practical work the first day, and continue through the entire course to gain knowledge for themselves rather than mere information based on the authority of others. It is believed that discipline of this character is the most valuable to students. During the Junior and Senior years, the study is continued in the same manner with special reference to Theoretical Chemistry and the more modern generalizations. The same regulations governing study of Physics apply to Chemistry. Electives and special courses in Chemical analysis, Spectrum analysis, Medical chemistry and chemical Technology are provided. Our chemical laboratory also is excellently equipped and complete.

Botany.—Structural, Physiological and Systematic Botany are practically taught, the classes being divided into sections, so that each section spends at least one hour a week in laboratory work, using the microscope (a sufficient number of the very best having been recently purchased) when occasion requires. The flora of the region is especially rich, offering the most varied material for study.

Physiology.—The second term in the Sophomore year is devoted to this study, the instruction being made as thorough and profitable as possible by demonstrations with the microscope, dissections, experiments, and the excellent models of Ausoux, recently purchased. Special lectures on Hygiene are given in the course.

Physical Geography.—This study is considered as one of the most important; the instruction is therefore made as thorough as possible, an understanding of the Physical and Natural History of the earth being insisted upon rather than a mere rehearsal of facts.

Geology.—The locality is most favorable for study in this department, as the region abounds in minerals, fossil remains and exposures

of strata in railroad cuts, mines and gullies. To points of interest excursions will frequently be made.

LATIN.

PROFESSOR EVANS.

Admission into the Freshman class is granted upon passing an examination in the first four books of Cæsar's Gallic War; seven of Cicero's Orations, including the four against Catiline; the first six books of the Æneid, with the Prosody; and in the translating, into Latin, of English sentences based upon the vocabulary and principles of the first thirty lessons of Allen's introduction to Latin Composition. But equivalents from other text-books may be substituted for the requirement here named.

In the college classes, we aim to make the student able to translate with readiness, at sight, and Latin based upon the vocabulary of the portions which are laid down in our course.

Remembering that an accurate and refined use of the English is not only an elegant accomplishment, but, also, the means of superior power, we aim, in the preparatory course, to make every Latin recitation an English language lesson, by requiring, from the beginning, the rendering of Latin idioms by pure English idioms, and by insisting upon a selection of the most fitting words for the rendering of Latin ideas; careful attention is also given the subject-matter—the historical and mythological references, the derivation, the construction, and the history of words, the comparison of Latin and English idioms and constructions, etc.

The work of the class-room is mostly on the recitation plan, in which the students render into English portions of the Latin text which they have studied, and into Latin, English that they have studied; also, at frequent intervals, they are required to translate, without previous study, some text which is selected for that purpose at the time.

During the Sophomore year, the history of Latin Literature, the domestic, political, religious, social and military customs of the Romans are studied and discussed, and the styles of the authors that have been read are compared.

Lectures are occasionally given on the Romans' mode of thinking, the development of the Latin language, its relation to other languages, and on other kindred subjects.

Works of reference: Harkness', Allen and Greenough's, and Gildersleeve's Latin Grammars, Harper's Andrews' Latin Lexicon, Anthon's

and Smith's Classical Dictionaries, Ginn & Heath's Classical Atlas. Post-graduate work similar to that offered under Greek is also offered in this department.

ELOCUTION.

MISS DONNALLY.

The design of this department is: First—to improve and develop the voice to its fullest extent of beauty, power and flexibility. For however good the natural voice, it always possesses marvelous capacity for improvement. Indeed one may say of the uncultivated voice as Addison has said of the human soul, that “it is like the marble of the quarry which shows but a small part of its beauty until the skill of the polisher brings out the colors, makes the surface as brilliant as the crystal, and discovers every ornamental cloud-spot running through it.”

Second—to adapt it to the correct and natural utterance of all thought, sentiment and passion. The student in gaining control of the voice in the expression of all the emotions, unconsciously to himself overcomes that constrained, awkward bearing, which in many cases arises from the feeling that he does not know *how* to do that which is required of him.

Third—to advance the general literary cultivation of the student. The proper study of a composition necessary to give it vocal expression leads the student to penetrate more deeply into the intent of the author than a silent perusal ever can. A comprehensive and correct study of oral expression can not, therefore, fail to confer a keener appreciation of the powers and beauties of the written language, and hence to a generally increased love of the best in literature.

MODERN LANGUAGES.

MISS EBERT.

It is our aim to bestow as much and careful attention upon the modern languages as their importance in a liberal education demands. One year of German, with four recitations per week, is required of the students in the Classical Course; and it is no very difficult matter for those who have received the benefit of a drill in the ancient languages to acquire in this time the general principles of the language and to read a few of the German literary masterpieces.

In the Philosophical Course the students begin a modern language earlier and advance more slowly; they have to acquire not only the language before them, but also the general principles of linguistic study.

Our object is to secure three things; facility in translation at sight, and as wide a range of reading as is possible in the time allowed; some study of the literature of each language; and practice in translation from English into the foreign tongue, with a training of the ear by conversation. Emphasis is, however, placed on translation, a large vocabulary for reading being thought preferable to a limited facility in speaking. Conversational readiness is not the sole or even chief end and aim of linguistic study, and while every effort is made to train the ear and tongue of students, we do not sacrifice to that the higher discipline and culture which result from the careful study of literary masterpieces, and from the habit of reproducing accurately and well, their thought in the student's own vernacular. The work for the past year has been as follows:

GERMAN.

FIRST TERM.	{ Grammar, Otis. Hauff, Das Wirthshaus im Spessart.
SECOND TERM.	{ Forty pages of Studien und Plaudereien. Schiller's Wilhelm Tell.
THIRD TERM.	{ Lessing's Minna von Barnhelm. Goethe's Faust, written exercises from English into German.

The more advanced students completed Faust, read selections from Heine's prose, and learned by heart the rather long comedy of Der Studentenstreich by Franz Bonn.

FRENCH.

FIRST TERM.	{ Grammar, Ploetz and Noeroth. French Reader begun.
SECOND TERM.	{ Reader and Grammar finished.
THIRD TERM.	{ Voltaire's Charles XII. French Essays.

This work was supplemented by the learning of anecdotes, poems, and a small manual of conversation.

A limited amount of post-graduate work is offered in this department, viz.: the History of the German Language, one term; the History of the French Language, with special reference to its connection with the Latin, one term.

PREPARATORY DEPARTMENT.

ELI DUNKLE, A. M., *Principal.*

This department is designed to prepare students for the regular course of the college. Students are also received who may wish to pur-

sue elementary studies, even though they may have no intention of entering upon one of the higher courses.

Candidates for admission to this department must furnish satisfactory evidence of good character, and must pass examination in geography, arithmetic as far as percentage, English grammar as far as syntax, and all studies of the courses lower than those which they wish to pursue. Much of the instruction is given by the regular college professors.

Persons who have certifiates from county examiners in Ohio will be admitted without examination in the subjects named in the certificates. But students who expect to graduate from the Normal Department must give evidence that they are thoroughly familiar with the common school branches. Opportunity is offered every term for reviewing some or all of these. Additional information of interest, to those who contemplate entering this department, will be found in other parts of this catalogue.

ALUMNI.

CONSTITUTION.

ARTICLE I. This Association shall be called the " Alumni Association of the Ohio University. "

ART. II. The officers of this Association shall be a President, Vice-President, Secretary, Treasurer, and an Executive Committee, consisting of three members, to be chosen annually.

ART. III. The annual meetings of this Association shall be held in connection with the commencement exercises of the University.

ART. IV. The objects of this Association shall be to cultivate fraternal relations among the Alumni of the University, and to promote the interests of our Alma Mater by the holding of social reunions, by literary exercises, or by such other means as the Association may, from time to time, deem best.

ART. V. Any member of the Faculty, and graduate of the University, also any one who may have spent three years in the college classes of the University, and been honorably dismissed, may, by the payment of one dollar and the signing of this Constitution, become a member of this Association.

ART. VI. This Constitution may be altered or amended at any annual meeting by a vote of two-thirds of those present at such meeting.

ART. VII. *Amendment.* The members of this Association shall each pay into its treasury an annual fee of one dollar, and the sum so paid shall be expended in defraying the expenses of the annual reunion.

OFFICERS OF THE ASSOCIATION.

<i>President</i>	H. M. LASH, M. D.,	Class of 1869.
<i>Vice-President</i>	L. M. JEWETT, Esq.,	" 1861.
<i>Secretary</i>	ELI DUNKLE, A. M.,	" 1877.
<i>Treasurer</i>	GEO. DESTIEGUER, A.M.	" 1884.

EXECUTIVE COMMITTEE.

ELI DUNKLE.....	Class of 1877.
E. J. JONES.....	" 1873.
L. E. MICHAEL, B. Ph.....	" 1884.
MARGARET BOYD, A. B	" 1873.
MURTLAND C. BAKER, B. S.....	" 1882.

FOURTH ANNUAL REPORT
OF THE
BOARD OF TRUSTEES AND OFFICERS
OF THE
Toledo Asylum for the Insane,
TO THE
Governor of the State of Ohio,
FOR THE FISCAL YEAR 1887.

BOARD OF TRUSTEES.

R. G. PENNINGTON, <i>President</i>	Tiffin.
J. W. FULLER	Toledo.
WM. E. HAYNES	Fremont.
JOHN H. DOYLE.....	Toledo.
D. W. H. HOWARD	Wauseon.

ARCHITECTS.

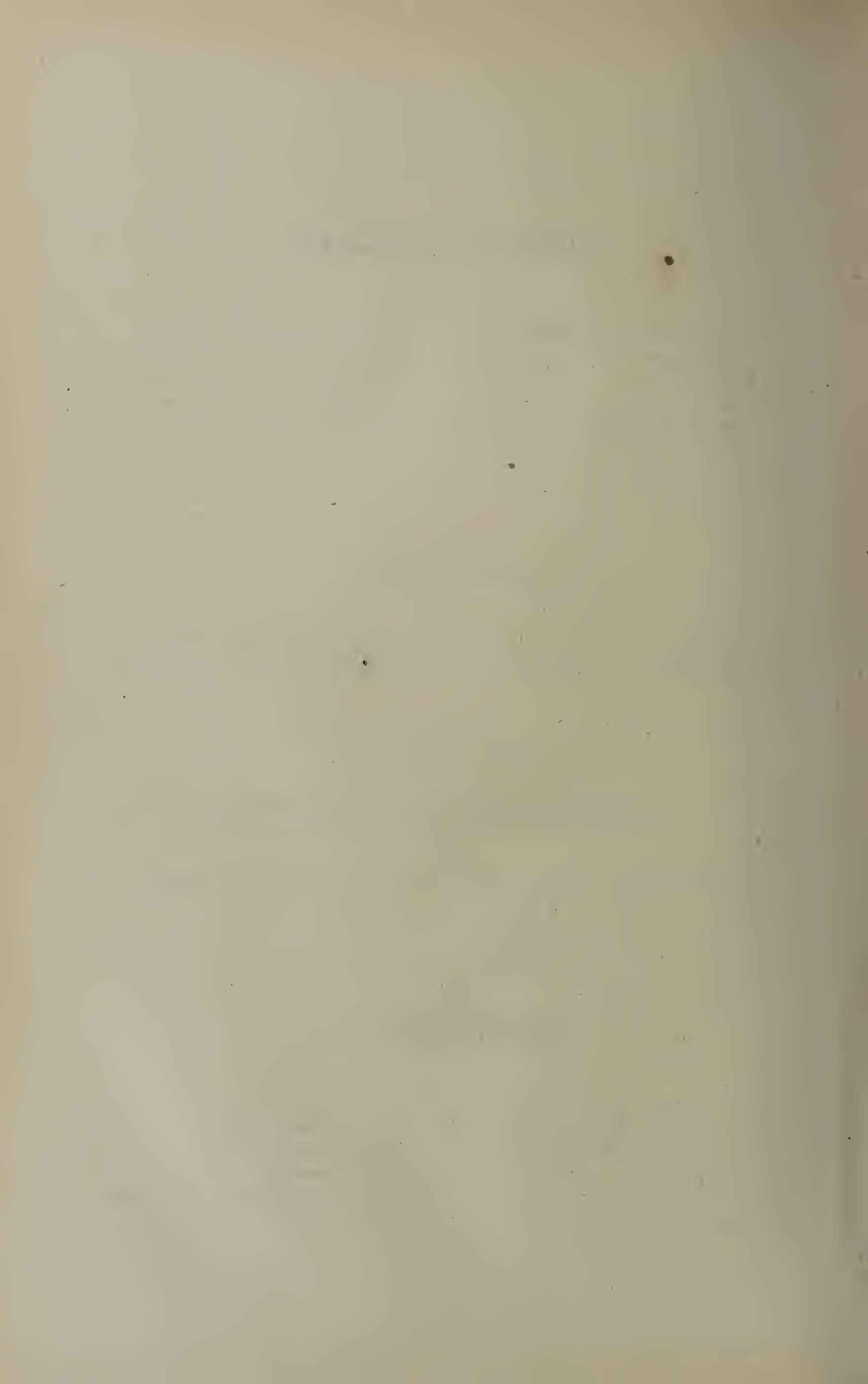
E. O. FALLIS	Toledo.
J. W. YOST.....	Columbus.

SUPERINTENDENT OF CONSTRUCTION.

JAMES WINANS	Toledo.
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RESIDENT OFFICERS.

H. A. TOBEY, M. D	<i>Superintendent.</i>
H. C. EYMAN, M. D.....	<i>Assistant Physician.</i>
S. W. SKINNER, M. D	<i>Assistant Physician.</i>
H. A. TOBEY	<i>Secretary.</i>
ALFRED WILKIN.....	<i>Steward and Financial Officer.</i>
MRS. M. C. TOBEY	<i>Matron.</i>



TRUSTEES' REPORT.

To His Excellency, Jos. B. FORAKER, Governor :

The Trustees of the Toledo Asylum for the Insane respectfully submit their fourth Annual Report for the fiscal year ending November 15, 1887.

On the 17th of November, 1886, H. A. Tobey, M. D., then a resident of Lima, Ohio, coming highly recommended by a large number of the medical profession of the State, also by members of the Board of State Charities, and other persons of high standing in civil life for his known professional skill, practical experience in the management and treatment of the insane, and his general qualifications and fitness for the trust, was appointed by the Board, Superintendent of the Asylum, as provided by law, to take effect December 1, 1886, which appointment was accepted by the doctor, and since the latter date, with Mrs. Tobey, his wife, a lady of culture and intelligence, and now Matron, has been in charge, and both devoting their time and best energies toward furnishing and fitting the institution for occupancy.

That on the 5th day of April, 1887, at a special meeting of the Trustees, called to reorganize the Board, which was made needful by the appointment of the Hon. John H. Doyle, of Toledo, in place of George L. Johnson, Esq., and Col. D. W. H. Howard, of Wauseon, in place of the Hon. John W. Nelson, former members of the Board. R. G. Pennington was elected President, and Dr. Tobey Secretary of the Board.

APPOINTMENTS.

Appointments made within the year by Dr. Tobey, Superintendent, and approved by the Trustees, are as follows :

Mrs. M. C. Tobey, Matron, appointed June 23, 1887.

Dr. H. C. Eyman, Asst. Physician, appointed July 1, 1887.

Dr. S. W. Skinner, Assist. Physician, appointed August 18, 1887.

Alfred Wilkin, Steward, appointed August 18, 1887.

The appointment of Mr. Wilkin, who gave bond with approved surety for the faithful discharge of his duties, as required by law, took effect on the 15th day of September last; the appointment of Dr. Skinner on the 15th inst., and that of Mrs. Tobey and Dr. Eyman took effect at the date of their appointments respectively.

CONTRACTS.

Contracts made by the Trustees since their last report, chiefly upon competitive bids for construction, materials, furniture and furnishings in the respective amounts, and with the several parties named and who only are interested in such contracts, so far as known to the Trustees, are the following:

With M. J. and W. Malone, for ice	\$2,728 92
“ “ “ employes' quarters and fire department	4,984 35
“ “ “ horse barn and stable.....	1,990 18
“ “ “ covered ways.....	13,700 00
“ The Edison United Manufacturing Co. Electric Light Plant.....	15,995 00
“ T. T. Menger, boring well.....	162 38
“ J. H. Stoner, for covering steam-pipes	2,017 40
“ Indianapolis Glue Co., for curled hair	4,150 00
“ Fred. Eaton & Co., for carpets, ticking and sheeting.....	3,349 87
“ C. L. Luce & Co., for sheeting, spreads and blankets	3,505 00
“ Hospital Supply Co., for laundry machinery	4,225 16
“ The John Van Range Co., for kitchen furniture and apparatus.....	1,530 00
“ Bramhall & Deane, for kitchen furniture and apparatus	618 00
“ Ames & Frost, for wire mattresses.....	902 25
“ E. M. McGillen & Co., for sheeting, window shades, etc.....	1,104 25
“ Corwen, Stoddard & Bros., for spreads, muslin, etc	538 00
“ Green, Joyce & Co., for blankets and spreads, etc	788 50
“ Wood, Brown & Co., for feathers and blankets.....	1,101 00
“ Northern Ohio Mills, for blankets	393 75
“ G. A. Hamberger, for blankets.....	900 00
“ Ohio Penitentiary, for blankets ..	900 00
“ Widdecomb & Co., for furniture	7,799 50
“ Halm, Bellows & Co., for furniture	520 00
“ Conant Bros., for furniture	4,574 30
“ Union Mattress Co., for iron beds and mattresses	714 00
“ Meilink Furniture Co., for furniture	360 50
“ Murphy & Co., for chairs	240 00
“ Cambridge Manufacturing Co., for chairs.....	240 00
“ Albert Neukum, for stone sidewalks	5,596 83
“ M. J. & W. Malone, for machine shop.....	2,700 00
“ “ additional storage building.....	2,045 00
“ “ bath-house	4,140 00
“ Shaw, Kendall & Co., for steam-heating same.....	750 00
“ “ “ 2 additional steel boilers.....	2,880 00
“ P. and T. P. Garrigan for grading and filling grounds.....	2,023 31
“ H. G. Neubert, for Trenton Hotel China.....	1,075 69
“ Daudt Crockery Co., for plated ware and crockery	1,544 95

ORIGINAL CONSTRUCTION FUND.

Of the original fund for the construction of buildings, steam-heating, etc., for the asylum, fixed by the act of April 18, 1883, at \$500,000, and appropriated for these uses, there remained unexpended, at the close of the fiscal year ending November 15, 1886, the sum of..... \$118,242 30

That since that time there has been expended of this balance in construction the sum of 105,192 76

Leaving a balance in the State Treasury of that fund the sum of	13,049 54
Subject to the payment of liabilities contracted for construction the sum of.....	7,588 08

SPECIFIC APPROPRIATIONS.

Appropriations made by the Legislature at session of 1885-6 for specific purposes, not including Trustees' expenses, viz.:

For covered ways	\$15,000
fire department and employes' quarters	5,000
horse barn and stable	2,000
bath-house	3,000
ice-house and refrigerator	3,000
electric lighting.....	18,000
covering steam-pipes.....	1,500
stone sidewalks	5,000
grading grounds and filling.....	5,000
railroad track from main line.....	2,500
implements for fire department.....	1,000
additional water pipes.....	1,400
tile drains	800
additional for hydrants.....	600
gate valves	200
	<hr/>
	\$64,000

Appropriations by the Legislature at session of 1886-7, for specific purposes, and which do not include Trustees' expenses, officers' salaries, nor current expenses of the institution, viz.:

For bath-house, additional	\$2,000
barn, stables and hog pen, additional	1,500
root cellar	2,500
repair shop and tools.....	3,000
house to propagate plants	1,000
Telephone Exchange.....	2,000
water-heaters	2,000
trees and shrubbery.....	600
stone drive ways.....	15,000
wooden fence	1,000
cisterns.....	1,000
tile drainage	300
stone sidewalk, additional.....	6,000
grading, filling, etc.....	3,000
railroad track, additional	2,500
library	1,000
fire department	1,000
horses and carriages.....	4,500
furniture and furnishings	60,000
covering steam pipes, additional	900
pictures	500
	<hr/>
	\$110,400
Total for session 1885-6.....	\$64,000
Total for session 1886-7.....	110,400
	<hr/>
Total	\$174,400

Of this sum of \$174,400, special appropriations, there has been expended in buildings, including architect's fees, publishing notices for proposals, and by purchase of materials and manufactured articles, the sum of \$96,113.23; leaving a gross balance of \$78,286.77, subject to the payment of liabilities contracted therein.

These conclusions will be justified by statements in detail by the financial officer and superintendent accompanying, and which will also show the balance, if any, in each case remaining unexpended and in the treasury.

In the special appropriations for the present fiscal year, aside from those	
above stated, are those for expenses of Trustees, including deficiency	
of last year.....	\$2,385 54
Current expenses.....	336 45
Salaries of officers.....	250 00
“	5,000 00
And for current expenses of the institution.....	50,000 00

The disbursements of which, and balance remaining unexpended of each fund, will appear in the report of the financial officer.

PROGRESS OF THE WORK.

The thirty-four buildings included in the original contracts with sewerage, steam heating, machinery and apparatus have been completed. The system of steam heating with all its machinery, pipes, etc., was fully tested during the intense cold weather of last winter, and the result justified all essential points assured by the contract. These thirty-four buildings, with the sewerage and system of steam heating, have been accepted by the Trustees, and turned over by the contractor to the care of the State. That during the present year we have added the following buildings and structures, besides changes and additions to existing buildings, made at the instance and upon the recommendation of Dr. Tobey, namely: Ice house, employes' quarters, fire department, horse barn and stable, covered ways, addition to the store-house in place of root cellar, repair shop, one well, six cisterns, and bath-house, the latter in course of construction.

GRADING AND FILLING.

Of this work, 10,000 cubic yards of earth, by contract, and 6,000 cubic yards by the labor of men and teams employed by the day, have been moved and placed upon the asylum grounds this season, under charge of the Superintendent of Construction. A small addition to this work will still be required.

STONE SIDEWALKS.

Last year 29,799 square feet of sawed stone were laid in the sidewalks to the buildings and structures agreeably to the plans, and this year we have laid down 29,573 additional square feet of same quality of stone from the Euclid quarries, which are of large dimensions, each stone spanning the width of the walk where used. The cost of this work is within the appropriation, yet some additional stone walks are needed to complete this branch of the work.

FURNITURE AND FURNISHINGS.

Of the \$60,000 appropriated for this purpose there has been expended under contracts with divers persons in the purchase of laundry machinery and kitchen apparatus, materials, fabrics and manufactured articles, including cost of advertising for proposals, the sum of \$38,631.74, leaving of this fund the sum of \$21,368.26 unexpended, but subject to liabilities, and remaining balance will be required in the purchase of additional furniture and furnishings to complete the necessary outfit of the institution. Chiefly all these articles of furniture and furnishings, machinery and appliances, were procured under contracts awarded upon public competition, by which good articles at low prices have been secured.

All the hair mattresses, pillows and bedding have been made at the asylum, under the supervision of Dr. Tobey, and by workmen employed by him, under the just conviction that by this mode much better materials could be obtained, while the cost of manufacture would not be in excess of current contract prices for like work. To this end curled hair, ticking, and other materials of excellent quality, were purchased upon bids submitted, and while the work has consumed much time and care, the articles produced, in our opinion, both in point of materials and workmanship, are of superior quality, and fully justify the experiment.

TELEPHONE EXCHANGE.

The care of procuring needed materials and apparatus, and erecting the telephone for the use of the several buildings, has been entirely with Dr. Tobey, and under his charge. The work will soon be completed and ready for inspection and test.

WATER.

The water supply for the institution, with all needed hydrants and fixtures, has been completed and connected with the city water-works, under contract for ten years' supply, at prices equal to the cost of pump-

ing only, and by which all the buildings and grounds are amply supplied with water for ordinary uses, as well as protection against accidents by fire. That for the use of the fire department 250 feet of hose, two hose reels, one chemical engine and five ladders have been provided.

ELECTRIC LIGHTING.

On the 25th day of February last, proposals, the second time, were received by the Board upon notice for the construction of an incandescent electric light plant for the use of the buildings and grounds of the asylum, and the bid of the Edison United Manufacturing Co., of New York, for \$15,995.00, as lowest and best, was accepted by the Board, and a contract entered into with that company for the construction of an electric light plant; to include three straight line engines of 70 horse power each, four dynamos, equal to producing and continuously maintaining 1,400 lights of 16 candle power each, with a complete and ample system of wiring throughout the entire group of buildings and grounds, covering and including 1,750 lamps of 16 candle power each, or their equivalent, with all fixtures needed in the several buildings as required by the specifications. This work is not yet entirely completed, and before its acceptance under the contract, a full and satisfactory test of all its parts and its performance to be made, and the plant to be operated for 60 days next succeeding such time as the Trustees shall designate, by a skillful expert employed by the contractors. That to operate this machinery two additional boilers were required, and which have been furnished and added to the steam-heating battery under contract awarded to Shaw, Kendall & Co., of Toledo.

FUEL.

For several months past the Board has had under consideration and inquiry the question of fuel for steam-heating and all other uses needed in the asylum. The chief question inviting this consideration was one of economy, as between the use of coal and natural gas. That after obtaining the best data within reach, the Board was satisfied that natural gas, as a heat-producing agent, in point of economy, as well as convenience, is to be preferred to coal; and acting on this conviction, on the 22d day of September, 1887, contracted with the Toledo Natural Gas Company, for a supply of natural gas sufficient for the entire institution for one year, commencing November 15, 1887, for the sum of \$12,000, payable in monthly installments, and for any gas used prior to that date, in ranges, grates, etc., the usual rates to be paid by the State.

An additional cost of \$816.35 for pipes and fixtures connecting the mains with the asylum buildings has also been incurred.

STONE DRIVEWAYS.

Plans for the driveways, with specifications and estimates, were made and forwarded to the State officers at Columbus on the 15th day of June last for approval, and from an oversight were not returned until August 28th following.

Our earliest notice to bidders expired October 1st ensuing, but no bids were received less than ten per cent. above the estimated cost of the work. To avoid any further delay, and to meet a pressing need for a portion of the driveway, by which to reach the asylum buildings from the public highway with wagons and other vehicles during the approaching wet season, the Superintendent of Construction, under the direction of the Board, has taken active steps toward providing for this exigency, and is now vigorously pushing the work to that end.

BATH-HOUSE.

In the building of this structure we have also met with unavoidable delays, chiefly for the reason that after several trials on public bids, it was found that the work of a suitable building for this purpose, and one as approved by the State, and by the Trustees, could not be let inside of the estimated cost; and also within the sum appropriated by the Legislature for that object; finally, and late in the season, by changes and eliminations, a contract for a building was let and the work of construction is now moving rapidly forward, but will require an additional sum of money to complete and equip the same.

WATER-HEATERS,

Provided for by specific appropriations, are under charge of Dr. Tobey, who is attending to all details in construction and fittings.

WOODEN FENCE.

No part of the appropriations for wooden fence and house for propagating flowers has been expended.

RAILWAY TRACK.

To connect the asylum by a short line of railway track with the Wabash, St. Louis & Pacific railway track, passing near by, and by which economical transportation of supplies would be secured, is an important object to obtain. To effect this purpose, public notice for

proposals for building this track was duly given, and expired on the 4th of the present month, and no response by way of proposals being received from any quarter, it was thought best, under the belief that both time and money could be saved, to have this work executed under the direction of the Superintendent of Construction, and the Board has so ordered it to be done.

In August last, from the effects of a violent tornado which swept over the asylum buildings, several of them were damaged, and notably the administration building, which suffered most, by the fall of several of its large and heavy chimneys, crushing in the slate roof, and penetrating, to some extent, the floors and ceilings below. These damaged buildings have all been fully repaired at a cost of \$1,265.66.

The contract for laundry and kitchen outfit, and for furniture and furnishings for the buildings of the asylum, were let upon bids as speedily as practicable after the means were appropriated by the Legislature for those objects.

That a large proportion of this machinery and furniture is of special design and for asylum uses, not kept in stock, but required to be made by the contractors, under specifications, by which much time has been needed and unavoidably consumed; this, with the delays before spoken of, have combined against all reasonable diligence and push exercised by the Trustees to the contrary, to postpone the opening of the asylum to patients for a few weeks beyond the time heretofore contemplated.

WANTS OF THE INSTITUTION.

Appropriations for the following purposes for the ensuing year are respectfully urged, some of which are indispensable to, and others are greatly needed in the successful administration of the institution, viz.:

Current expenses	\$175,000
Officers' salaries.....	4,500
Trustees' expenses.....	1,000
Repairs.....	5,000
Library	500
Pictures	500
Painting.....	1,500
Surgical instruments	500
Industry building	8,000
Completing shop, and for tools and machinery	3,000
Barn	3,500
Green-house and recreation building for female patients	6,000
Amusement hall.....	15,000
Recreation building for male patients.....	3,000
Shelter to walks connecting the buildings	20,000
Night-watch and electric clocks.....	2,000
Water well, with pump, and connections with buildings	2,500

Iron fence	7,000
To complete wooden fence	1,500
Additional stone walks.....	2,500
Completing bath-house and fixtures	2,500
Grading	2,000
Morgue.....	2,500
Scales	1,500
Land	20,000

By the accompanying statement of Dr. Tobey, Superintendent, these needed appropriations, and the objects and purposes for which they are desired, are more fully set forth and explained in detail, and to which attention is respectfully invited.

The great variety and multiplicity of objects included in the work of the past year, in way of new structures, additions to, and changes in existing ones, and the equipment of all the asylum buildings with needful furniture, machinery, fixtures and furnishings have consumed much time, labor and thought; and for the success so far in the work, we owe much to the experience and unceasing labor of Dr. H. A. Tobey, and to the professional ability and untiring energy of James Winans, Superintendent of Construction, who at all times, whether in the line of his professional engagements or not, cheerfully responded to the call of the Board.

We also desire to express our appreciation of the uniform kindness and attention shown us by Dr. and Mrs. Tobey while on official business at the asylum, and of their earnest co-operation in the preparatory work of the institution.

Respectfully submitted.

R. G. PENNINGTON,
WM. E. HAYNES,
JOHN H. DOYLE,
J. W. FULLER,
D. W. H. HOWARD.

SUPERINTENDENT'S REPORT.

To the Honorable Board of Trustees of the Toledo Asylum for Insane:

GENTLEMEN: I have the honor herewith to submit the Superintendent's report for the asylum under your control for the year ending November 15, 1887.

Soon after my appointment to the office of Superintendent, as you are aware, I took up my residence in the city of Toledo, and began familiarizing myself with the affairs of the institution, studying its general arrangement, its special features, and to formulate estimates of what would be required to complete the institution, and fit and furnish it for occupancy.

To better qualify myself for the work in hand, in compliance with a resolution of your honorably body, I visited a number of institutions for the insane in this and other States. The information thus gained was of much value to us, enabling me in many instances to determine with better judgment the kind and quality of articles and materials best adapted to the requirements of the institution.

On the 16th of May, on competitive bids, contracts were awarded for a quantity of curled hair and ticking for mattresses. The delivery of the articles purchased begun soon after the contracts were awarded.

During the early part of the month some rooms in the administration building has been furnished, the kitchen provided with a range and other necessary cooking utensils, and on the 24th myself and family, with a small force of employes, began living at the institution.

FURNITURE AND FURNISHINGS.

Two upholsterers, two sewing girls, and a number of boys to pick hair were employed, and the work of making hair mattresses at once begun. Ten thousand pounds of super-extra black drawings and two thousand pounds of pure South American soft hair was the quantity of mattress hair originally purchased. On July 8th, by a resolution of the Board, an additional purchase of fifteen hundred pounds of super-extra black drawings was authorized, making the total amount of hair used thirteen thousand five hundred pounds. From this quantity

seventy-seven double mattresses, six hundred and seventeen single mattresses, and four hundred and eighty hair pillows were made, which were all completed by the 1st of September.

All the hair furnished was of the best quality and fully up to the sample. Much credit is due the firm for the faithful and honorable manner in which they fulfilled their contract.

On June 1st contracts were awarded for most of the furniture, blankets, material for bedding, linen, etc., required to equip the wards and employes' rooms. Every article thus purchased was of a good or superior quality, it being your opinion, as well as my own judgment, that the purchase of inferior articles at a less price was not true economy or to the best interests of the State.

The contractors for the numerous articles, with but few exceptions, were both faithful and prompt in the fulfillment of their obligations, and have shown an entire willingness to make good any article that was not fully up to the sample or to the specifications, as the case might be.

With the exception of a portion of the carpets, a few dozen chairs and the bedsteads for patients, all the supplies contracted for were delivered at the institution by the first of October.

All the sheets, pillows, pillow cases, straw ticks, towels, comforts, etc., for the institution have been made, or are being made, under the supervision of the matron, whose report you will find appended.

Bids were received from a number of leading manufacturers of laundry machinery, for furnishing the laundry with both wooden and metal machines. After careful investigation as to the merits of the various kinds of laundry machinery it was believed that the Hamilton E. Smith machinery was the most durable and best adapted to meet the requirements of the institution, therefore, a contract was made with them for five No. 3 metallic washers, two No. 5 metallic washers, one No. 6 mangle, and two Dolph centrifugal extractors, all in place with all necessary shaftings, pulleys, belts, etc., ready for use. The power is furnished by a thirty-seven horse power Russell Automatic Engine. Both the engine and laundry machinery have been tested to our entire satisfaction.

The general kitchen is provided with a Van No. 10 center range, two 100-gallon boiling kettles, two 70-gallon boiling kettles, two 60-gallon jacket copper kettles, two steam roasters, three vegetable steamers, and a Stevens large double refrigerator. Each of the general dining-rooms are furnished with a 50-gallon Van tea urn and a 60-gallon Van coffee urn, and a large steam table. All are in place and ready for use.

There will yet be required for the general kitchen a two-oven wall range for cooking for the sick and for pastry cooking, a meat broiler and

a coffee and tea urn for furnishing coffee and tea for the dining-rooms of cottages, wards for the infirm patients and wards for the disturbed patients.

The dishes for the institution were purchased upon competitive bids, and are of the quality known as Vitrified Hotel China. This ware is somewhat more expensive than Iron Stone China, or other cheaper grades, but I am assured by practical hotel men, and dealers in crockery ware, that while the first cost is somewhat greater, yet where dishes are subject to hard usage, this ware is much cheaper in the end.

Of the appropriation of \$60,000 for furniture and furnishings, there has been expended for work done and articles furnished \$44,720.52, which includes bills amounting to \$6,888.78 that were approved at the date of this report, but are not yet paid. There is yet to be paid on articles and materials contracted for, the sum of \$6,484.80, leaving a net balance in the appropriation of \$8,794.68. Estimates show that this amount is barely sufficient to complete the equipment of the institution for its full complement of patients.

TELEPHONE EXCHANGE, ELECTRIC CLOCKS AND NIGHT-WATCHMAN'S CLOCK.

Of the appropriation of \$2,000 for telephones, \$1,567.03 has been expended, leaving a balance of \$432.97 in the State treasury. This amount will be required to complete the work.

A Patterson, lead covered, underground cable has been put in, connecting all the buildings and wards with the central office, or exchange, in the administration building. In addition to the wires in the cable for telephones, one wire extends through the entire system for a medical battery, one for fire alarm, one for secondary electric clocks, and four to connect with a night-watchman's clock. The work of connecting up the telephone wires with the central office is almost finished, and when completed, will be a permanent and complete system.

The plan of this institution renders it of great importance that every ward, cottage and other departments have exactly the same time. As you are aware, a very large per cent. of the patients must go out from their cottages and wards to the general dining-rooms, and it is of the utmost importance that they all should start at the proper time so that none shall be either too early or too late, thereby obviating confusion and delay. It is impossible with ordinary clocks to have the same time at every place, and delays and confusion from this cause would frequently and unavoidably arise. It is also of the greatest importance to this institution, separated as the buildings are, that the night-watchmen should register each visit at the central office at the time of making such visits at the various wards, cottages, and other places they are re-

quired to visit during the night. This register is a record of the night-watchmen's visits, and is also an assurance that they are faithful in the discharge of their duties.

Being confident that your honorable body would sufficiently recognize the importance of recording the night-watchmen's visits, and of having uniform time, I assumed the responsibility of having additional wires for these purposes put in the cable of electric wires that I have just spoken of.

There are two or three systems of electric time which have been proven beyond all question to be entirely practicable. The systems which have proven most successful are essentially the same and very simple in principle. An ordinary clock or regulator run by weight or spring is placed in the central office, and transmits time to secondary clocks or dials in any number, or placed at any distance from each other.

The escapement wheel in the master clock causes to be connected each minute a current of electricity, which passes through the coils of the secondary clocks and causes the minute hands of the clocks to move forward one minute. The secondary clocks require but a small amount of battery, and do not easily get out of order, and are therefore inexpensive to keep up.

The cost of the entire system of both night-watchmen's clock and electric time would not exceed \$2,000.

LIBRARY.

An appropriation of one thousand dollars was made for this purpose at the last session of the Legislature, which was of course intended for both medical and general library.

There remains in the appropriation \$579.43. An order for books already placed will require almost this entire sum.

When the entire amount is expended, both the medical and general library will be very small and incomplete, when we consider the number of persons there will be to use books.

An appropriation of not less than \$500 for library purposes should be asked for.

WATER-HEATERS.

A steam pipe for high pressure, connecting with the boilers at the boiler-house, has been put in the tunnel, with branch pipes connecting with each cottage and buildings where hot water or steam will be used. A pipe for hot water has been carried from the boiler-house to the laundry, thence to the kitchen and dining-rooms, and returned again

to the boiler-house. Both ends of this pipe will be connected with a large water-heater in the boiler-house. By having the pipe returned to the heater in this manner a circulation of hot water will be constantly maintained in the main pipe, requiring only branch pipes to be emptied before hot water can be drawn from the faucets. A water-heater of large capacity has been contracted for, and is almost completed, which will be placed, as before stated, in the boiler-house, and which will supply all the central buildings, administration building, and a number of cottages. The wards and cottages that are too remote to be supplied from the central heater will each need to be provided with a small water-heater.

There is remaining of the appropriation of \$2,000 for water-heaters and connections, \$1,277.03, which will be required to complete the work.

CURRENT EXPENSES.

There has been expended from this appropriation, \$18,106.30, including all liabilities to date. By reference to the Steward's report it will be seen \$3,876.63 has been expended in payment of bills that do not properly come under the head of current expenses. One item of this expense was repairs to buildings damaged by a cyclone, which occurred during the month of September, there being no other appropriation from which money could be taken. All the harness, horse blankets, etc., for the stable, have also been paid for from this fund, the Auditor of State not allowing bills for such articles to be paid from the appropriation made for horses, wagons and carriages. \$3,171.22 has been expended for apples, potatoes, coal and other supplies, the bulk of which are still on hand.

There remains in this appropriation \$31,893.70. In my opinion an appropriation of \$175,000, less any unexpended balance there may be on the 15th of February, should be asked for the ensuing year. By that date there will probably be one thousand patients in the institution.

I estimate that the per capita cost for the first year will be \$175. This is somewhat greater than the average per capita cost of the other asylums of the State; but there will be necessarily many expenses incident to the equipment and supply of this institution that will require an enlarged cost of maintainance. A larger force of employes will be required for the first year than will be necessary after the institution is thoroughly organized; besides, there is no farm or garden from which to draw supplies, no pasture land for cows, no organized labor of inmates, or other source by which a low rate of per capita can be attained.

SHELTER TO WALKS CONNECTING BUILDINGS.

I do not intend to discuss to any extent in this report the advantages or disadvantages of the special features of this institution, reserving such discussion and presentation of opinions until the institution has been occupied by patients. However, I have no hesitancy in stating that I can see many advantages that an institution built upon this plan has over the old plan or wing buildings. The better sanitary condition, the more home-like appearance of patients' quarters, and the total absence of anything prison-like in appearance, are features which very strongly recommend the cottage system, and I confidently believe that with some modifications, or rather additions to the original plan, this institution will be found to be entirely practicable, and a step in advance in asylum construction.

The feature of the institution, which I conceive to be a great disadvantage is, that the patients must be taken from the cottages to the general dining-rooms to their meals, a distance in some instances of three hundred yards, without any protection or shelter from storms or inclement weather. This defect can be remedied without great expense. As you are aware, a stone sidewalk, eight feet wide, each stone spanning the entire width, extends entirely around in front of all the cottages and buildings occupied by patients. I would recommend that a roof be built over this walk, and the walks connecting the buildings with the main walk, supported on posts at either side of the walk, placed at suitable distance from each other. I would further recommend that doors, the size of the space between the posts, be hung to the stringers connecting the posts.

In summer season these doors could be swung up, one over the other, under the roof, leaving nothing visible when looking across the grounds, except the posts supporting the roof, and the roof itself. At the approach of cold weather these doors would be let down entirely, enclosing the walk, and affording a covered way for patients to pass through to and from the dining-rooms. Heat sufficient to partially warm this covered way could be obtained by tapping the brick duct that is near the walk that contains the steam pipes, at suitable distances and bringing a conduit under the walk and opening it through a grate.

An estimate has been made by an architect of the cost of the proposed improvement, and it is found that \$22,000 would be required. This is a matter of so much importance and so essential to the health, comfort and welfare of the inmates, that I recommend that an appropriation be asked for the purpose.

RECREATION BUILDINGS AND GREEN-HOUSE.

Perhaps there is nothing more important in the care and treatment of the insane than that they should be provided with suitable recreation and an abundance of outdoor exercise. I think there is no one feature of asylum management that is eliciting more attention from the superintendents of the various institutions than that of affording suitable facilities for employment and recreation. I have known many persons that when kept in the wards were restive, irritable, excitable and sleepless at night, but when allowed to spend the greater portion of their time out of doors, and were provided with either labor or entertainment, they became quiet, slept well and improved rapidly both mentally and physically.

As you are aware there are but few trees on the grounds that are near enough to the buildings to be used by the patients for shade, therefore, suitable shelters should be erected to which patients may go to spend their time while out of doors. The plan that I have thought of with favor is, to erect a building in the center of each park or plot of ground that is surrounded by the buildings for patients.

The building for male patients I would have but one story high and divided into three rooms, the center room being the largest, to be used for a billiard and pool-room; one of the other rooms I would use for a library and reading-room, and the other for games such as cards, checkers, chess, etc., the building to be entirely surrounded by a wide and spacious porch or piazza. Such a building would afford both shade and entertainment, and being centrally located the patients would be kept under observation and surveillance without their being aware of the fact that any effort was being made to guard them.

The building for female patients I would have in connection with a green-house and conservatory for flowers, and would have it divided into a library and reading-room, and a room for amusements, and also have it amply provided with verandas.

The necessity of this institution for ample facilities for growing flowers is so obvious that but little argument is necessary. It will be some years before lawns, trees and shrubbery will contribute much to the beauty of the grounds, therefore, we must depend for ornamentation upon beds of flowers.

Six thousand dollars will be required in addition to the \$1,000 that was appropriated last winter for a propagating house, for a green-house and recreation building for female patients.

Three thousand dollars will be required to erect a suitable building for male patients.

AMUSEMENT HALL.

The necessity of an amusement hall for this institution still exists, the appropriation asked of the Legislature at its last session not having been granted. The importance of having a place where patients may congregate for amusement and entertainment is so generally recognized, and so well understood by you, that any discussion of the matter here would be superfluous.

Fifteen thousand dollars will probably be required to construct a building of sufficient size for the purpose.

INDUSTRIAL BUILDING AND SHOPS.

In a very large per cent. of the reports of asylums for insane of the country, published from year to year, you will find the subject of employment of patients discussed, while superintendents are not in accord as to the kinds of labor that should be performed, or the number of hours each day patients should be employed, yet all are of one mind as to the beneficial effects of useful employment to a large class of insane persons, and the tendency is to increase the facilities for their employment and to make the kinds of labor more varied so that all who are inclined to work may find something to do.

The abandonment of the assistant physicians' residences, as was originally contemplated in connection with this institution, brings more persons to reside in the administration building, therefore, the room which was designed for a sewing-room, where patients would have been employed, we were compelled to divide into living rooms, and to finish a room in the basement to use temporarily for a sewing-room.

As you are aware there is no ironing-room or distributing room in connection with the laundry building, all the space there being required for the drying-room, engine-room, room for making soap, and for laundry machinery, therefore, we will be obliged to use one of the wards in the building for infirm patients for an ironing-room and distributing room until suitable rooms for that purpose can be provided.

In my opinion a building should be built which could very appropriately be termed an industrial building, in other words, a building where facilities would be afforded for various kinds of employment for female patients, and all could be put under intelligent and careful supervision.

In this building I would have an ironing-room, distributing room, mending room, two sewing-rooms, and two or three rooms for varied employment, such as brush-making, mat making, carpet weaving, fancy work, etc., all of which are carried on very successfully with benefit to

the patients, and some profit, in a number of institutions in the country.

A plan has been designed for such a building, and it is estimated that it will cost \$8,000.

Last year the Legislature was asked to appropriate \$5,000 for shops and machinery; only \$3,000 was appropriated. With this amount we have only been able to build a portion of the buildings that will be necessary for this purpose, and we have not been able to provide any tools and machinery.

Three thousand dollars should be asked to complete the buildings and provide them with tools and machinery. When this improvement is completed there will be a room for each, a machine shop, blacksmith shop, carpenter shop, upholsterer shop, paint shop, and a room for male patients to be employed at other industries such as brush-making, bottoming chairs, shoe making, etc.

WATER WELL.

A water well was drilled near the boiler-house last spring. The well is one hundred and thirty-eight feet deep, about forty-five feet of it being in the rock. This well was only intended as an experimental well to ascertain if a supply of water could be obtained, and it is very gratifying to be able to state that the experiment was entirely successful, and that apparently an abundant and inexhaustible supply of water has been found.

The hole in the rock is only about two inches in diameter, which is too small to admit of the use of a pump of much capacity. The well was pumped for a considerable time at the rate of a barrel every four minutes, the capacity of the largest pump that could be used, without any appreciable decline in the supply.

A well not less than six inches in diameter should be drilled into the rock and furnished with a suitable pump, which should be connected by a system of pipes with every portion of the institution.

The cost of this improvement would probably be \$2,500.

GRADING.

There still remains a large amount of grading to be done, a portion of which, for the health of the occupants, should be done as early in the spring as practicable.

An appropriation of not less than \$2,000 should be made for grading.

LAND.

The institution is very much in need of more land, there being only about forty acres that can be used for both pasturage and garden.

A very large per cent. of the persons that will be inmates of this asylum are farmers, many of whom would be very much benefited by having employment at their vocation, and their labor would return considerable profit to the State. Therefore, I recommend that the Legislature be asked for an appropriation for purchasing additional land, at its next session.

IRON FENCE.

The peculiar plan of this institution, the buildings being so widely separated and entirely detached from the administration building, renders it of the utmost importance that every protection that can be given the inmates against the intrusion of curious, malicious or designing persons, should be provided.

With the grounds entirely open upon the public highways, as they are, persons could go to any of the buildings occupied by patients unobserved, and without the knowledge of the officers of the institution or even the persons in charge of the building, could converse with patients from windows, carry improper articles to them, and commit other depredations for which no person connected with the institution could justly be held responsible.

A strong picket iron fence, not less than five and one-half feet high, should be built entirely along the front and north side of the grounds. Such a fence would render it difficult for any one to enter the grounds except by the entrances, where they could be observed coming and going, and would materially lessen the liability of the escape of patients.

CONCLUSION.

Before concluding this report, I desire to take occasion to express my grateful appreciation of the diligent manner in which the employes and all others associated with me in the work of putting the institution in readiness for patients, have performed their duties.

To you, gentlemen of the Board, I am under many obligations, for personal kindnesses, and for the wise counsel and advice you have at all times extended to me.

Hoping that under your careful management, and with the aid of kind Providence, we will be enabled to carry the asylum safely through the period it has entered upon, and that it may successfully accomplish the object for which it was organized, this report is respectfully submitted.

H. A. TOBEY,
Superintendent.

MATRON'S REPORT.

My report is herewith respectfully submitted :

ARTICLES MANUFACTURED.

Sheets.....	5,105
Pillow cases	2,662
Table cloths, hemmed.....	280
Towels	1,519
Clothes sacks.....	387
Calico quilts.....	194
Gingham quilts.....	539
Spreads, hemmed.....	1,224
Pillow ticks	1,177
Mattress ticks.....	700
Straw ticks	445
Curtains.....	17
Shams.....	6 dozen.
Napkins, hemmed	19 “
Twenty large rugs and thirty small rugs made from remnants of Brussels carpet.	

FRUIT CANNED.

Peaches.....	322	gallons.
Peach preserves	10	“
Chow chow	7½	“
Pears	573½	“
Grapes.....	276	“
Grape jam	368½	“
Apples.....	238	“
Tomatoes	236	“
Quinces.....	272	“
Pear butter.....	243	“
Pear pickles.....	8½	“
Catsup.....	27	“
Pickles.....	8	“
Crab apple marmalade.....	6	“
Plums	54	“
Jelly.....	314	glasses.

MINNIE C. TOBEY,
Matron.

STEWARD'S REPORT.

TOLEDO ASYLUM FOR THE INSANE,

November 15, 1887.

H. A. Tobey, M. D., Superintendent:

DEAR SIR: The following report of the financial department of this institution for the fiscal year ending November 15, 1887, includes the receipts and disbursements of my predecessor up to and including the 15th of September last, as shown by the records in this office.

Respectfully submitted.

ALFRED WILKIN,

Steward.

STATEMENT OF RECEIPTS AND DISBURSEMENTS BY THE FINANCIAL OFFICER, AND SHOWING THE CONDITION OF THE VARIOUS APPROPRIATIONS

IN THE STATE TREASURY FOR THE FISCAL YEAR ENDING NOVEMBER 15, 1887.

Name of appropriation.	Balance in State Treasury November 15, 1886.	Appropriations made dur- ing fiscal year ending Nov. 15, 1887.	Total amount subject to draft and in hands of financial officer during year ending Nov. 15, '87.	Amount drawn from State Treasurer during year ending Nov. 15, 1887.	Total amount to be account- ed for for year ending November 15, 1887.	Amount disbursed during fiscal year ending Nov. 15, 1887.	Balance in State Treasury November 15, 1887.
Current expense .....	.....	\$50,336 45	\$50,336 45	\$13,397 30	\$13,397 30	\$13,397 30	\$36,939 15
Trustees' expense	\$61 39	2,385 54	2,446 93	1,646 60	1,646 60	1,646 60	800 33
Salary of officers .....	.....	5,250 00	5,250 00	1,424 99	1,424 99	1,424 99	3,825 01
Library .....	.....	1,000 00	1,000 00	420 57	420 57	420 57	579 43
Repair shops and tools .....	.....	3,000 00	3,000 00	221 40	221 40	221 40	2,778 60
Barn, stable and hog-pen	2,000 00	1,500 00	3,500 00	1,990 18	1,990 18	1,990 18	1,509 82
Covered ways	14,953 00	.....	14,953 00	12,852 70	12,852 70	12,852 70	2,100 30
Bath-house	3,000 00	2,000 00	5,000 00	104 23	104 23	104 23	4,895 77
Asylum construction	118,242 30	.....	118,242 30	105,192 76	105,192 76	105,192 76	13,049 54
Employees' and fire department quarters	5,000 00	.....	5,000 00	4,959 05	4,959 05	4,959 05	40 95
Ice house and refrigerator	3,000 00	.....	3,000 00	2,823 89	2,823 89	2,823 89	176 11
Electric lighting	17,923 80	.....	17,923 80	6,393 50	6,393 50	6,393 50	11,530 30
Covering steam pipe	1,500 00	900 00	2,400 00	2,069 93	2,069 93	2,069 93	330 07
Tile drain	730 00	300 00	1,030 00	908 47	908 47	908 47	121 53
Stone sidewalk	4,968 85	6,000 00	10,968 85	10,064 18	10,064 18	10,064 18	904 67
Grading	2,095 30	3,000 00	5,095 30	4,959 31	4,959 31	4,959 31	135 99
Water pipe, additional	1,400 00	.....	1,400 00	1,255 70	1,255 70	1,255 70	144 30
Hydrants,	600 00	.....	600 00	560 23	560 23	560 23	39 77
Gate valves	200 00	.....	200 00	200 00	200 00	200 00	.....
Root cellar and storage room .....	.....	2,500 00	2,500 00	71 57	71 57	71 57	2,428 43
Fire department	1,000 00	1,000 00	2,000 00	1,088 80	1,088 80	1,088 80	911 20

Telephone Exchange	2,000 00	280 73	280 73	1,719 27
Water-heaters and connections	2,000 00	102 49	102 49	1,897 51
Trees and shrubbery	600 00	68 00	68 00	532 00
Driveways	15,000 00	130 08	130 08	14,869 92
Cisterns	1,000 00	1,000 00	1,000 00	.....
Furniture and furnishings	60,000 00	38,631 74	38,631 74	21,368 26
Horses, carriages and wagons	4,500 00	2,727 43	2,727 43	1,772 57
Pictures	500 00	.....	.....	500 00
Wooden fence	1,000 00	.....	.....	1,000 00
Railroad track.....	2,500 00	.....	.....	5,000 00
House propagating flowers.....	1,000 00	.....	.....	1,000 00
Totals	\$169,271 99	\$215,545 83	\$215,545 83	\$132,900 80

CURRENT EXPENSE.

On what account.	Amount.
ADVERTISING.	
Notice to contractors	\$19 55
BREAD, ROLLS, ETC.	
Bread, 1,887 loaves	80 61
Rolls, 2 dozen	16
Puffs, cream, 1 dozen	25
Total	\$81 02
BUTTER AND EGGS.	
Butter, 978 $\frac{1}{2}$ pounds	240 13
Butterine, 200 $\frac{1}{4}$ pounds	32 69
Eggs, 323 dozen	51 81
Total	\$324 63
BROOMS AND BRUSHES.	
Brooms, 5 dozen	13 38
“ 1 “	1 25
Brushes, varnish, 3	4 90
“ hair, 2	4 30
“ cloth, 1	1 25
Total	\$25 08
BLANK BOOKS AND STATIONERY.	
Blank books, 25	127 25
“ time, $\frac{1}{2}$ dozen	1 38
Blotter pads, 21	2 45
Covers, 50	25
Erasers, 1	10
Fasteners, 2 boxes	55
Letter-heads, 4,000	22 25
Note, 500	2 25
Ink, carmine, $\frac{1}{2}$ dozen	50
“ indelible, 4 $\frac{1}{2}$ dozen	7 34
“ writing and copying, 3 $\frac{1}{2}$ quarts	2 75
“ stands	1 25
Mucilage, 6 $\frac{1}{2}$ dozen	1 70
Mathematical instruments, 1 set	12 50
Order blanks, 1,000	5 50
Paper, carbon, 1 dozen	50
“ legal cap, 14 quires	2 60
“ copy, 2 reams	5 00
Packages, letters, 6	1 50
Pin-holders, 1 $\frac{1}{2}$ dozen	70
Pins, 3 gross	2 25
Pencils, 6 $\frac{1}{2}$ dozen	3 85
Postal cards	2 80
Postage stamps	10 00

CURRENT EXPENSE—Continued.

On what account.	Amount.
<i>Blank Books and Stationery—Continued.</i>	
Envelopes, 2 M.....	\$15 70
Rubber bands, 3 gross.....	1 85
Sponge cups, 3.....	45
String tags, 1,100.....	1 90
Specifications, 100.....	2 00
Vouchers, 500.....	8 22
Total.....	\$247 37
CIDER AND VINEGAR.	
Cider, 5 gallons....	63
Vinegar, 73 gallons.....	13 38
Total.....	\$14 01
CANNED GOODS.	
Apples, 2 dozen.....	1 50
Apricots, 5 dozen.....	12 00
Cherries, 1½ “.....	4 50
Corn, 4½ “.....	4 50
Peaches, 5 “.....	13 36
Peas, 5 “.....	7 60
Pears, 3 “.....	7 50
Tomatoes, 5½ “.....	6 50
Total.....	\$57 46
COAL.	
Soft coal, 357 ¹⁹⁵⁰ / ₂₀₀₀ tons.....	1,096 79
Charcoal, 10 bushels.....	1 50
Total.....	\$1,098 29
DRAYAGE, FREIGHT, ETC.	
Drayage.....	41 70
Freight.....	40 00
Express.....	10 00
Total.. ..	\$91 70
DRY GOODS, NOTIONS, ETC.	
Damask, table, 2 yards.....	55
Duster, linen, 1.....	1 25
Quilts, 2.....	1 77
Wax and thread.....	25
Total.....	\$3 82
FORAGE.	
Bran, 255 pounds.....	2 04
Corn, 35 quarts.....	11 25
Chop feed, 1,777 pounds.....	16 99

CURRENT EXPENSE—Continued.

On what account.	Amount.
<i>Forage—Continued.</i>	
Hay, 5 ⁴⁷⁵ / ₂₀₀₀ tons.....	\$74 89
Oats, 246 ¹ / ₃ bushels	83 74
Shorts, 524 pounds.....	4 72
Total.....	\$193 63
<i>FLOUR AND FEED.</i>	
Flour, wheat, 6 ³ / ₄ barrels	36 65
“ Graham, 6 packages.....	1 50
Farina, 1 ¹ / ₄ boxes.....	2 60
Meal, corn	1 95
“ oat, 40 pounds	1 00
Oats, rolled, 10 pounds	35
Wheat, cracked, 40 pounds.....	1 78
Total.....	\$45 83
<i>FRUITS.</i>	
Apples, 356 bushels	208 72
Berries, 165 pints	48 40
Bananas, 20 ¹ / ₃ dozen	6 79
Currants, 45 pounds.....	3 09
Grapes, 4,190 pounds.....	100 38
Lemons, 71 dozen	17 96
Melons.....	53 50
Oranges, 19 ¹ / ₂ dozen.....	14 00
Olives, 7 bottles.....	3 20
Peaches, dried, 25 pounds.....	1 75
“ green, 59 ¹ / ₂ bushels	113 30
Pears, 114 ¹ / ₂ bushels.....	121 33
Plums, 8 bushels.....	12 80
Pine apples	40
Quinces, 8 bushels	12 00
Total.....	\$717 62
<i>FISH AND OYSTERS.</i>	
Fresh fish, 399 pounds	46 25
Oysters, 5 gallons	6 20
Shrimps, 14 cans.....	4 45
Sardines, 12 dozen	21 54
Salmon, 5 dozen.....	12 25
Total	\$89 79
<i>GROCERIES.</i>	
Beans, 11 bushels	27 91
“ Lima, 38 quarts.....	8 45
“ green, 9 quarts.....	1 62
Baking powder, 30 pounds	15 00
Bluing, 3 dozen.....	3 30
Bath brick, 2 boxes	2 83
Beets, 11 bushels	6 41
Coffee, 318 pounds.....	99 60

CURRENT EXPENSE—Continued.

On what account.	Amount.
<i>Groceries—Continued.</i>	
Chocolate, 7 pounds.....	\$3 50
Citron, 1 pound.....	40
Crackers, 256 pounds.....	12 66
Clothes lines, 9	2 25
“ pins, 14 dozen.....	42
Cheese, 47½ pounds	5 65
Cream tartar, 3 pounds.....	1 40
Cocoa, 7 pounds	2 45
Cocoanut, 8 pounds	2 45
Corn starch.....	70
Coal oil, 158 gallons.....	15 47
Gelatine, 3 dozen.....	5 60
Honey, 120 pounds.....	24 81
Horse radish	40
Hominy, 35 pounds.....	1 00
Jelly	18
Lemon extract, 2 dozen	2 20
Lye	60
Matches, 1 box.....	1 90
Mops, 1 dozen	2 20
Molasses, 5 gallons.....	3 20
Maple syrup, 9½ gallons	11 88
Mustard, table, 1 case.....	7 65
Macaroni, ½ dozen	1 20
Mushrooms, canned, ½ dozen	1 25
Nutmegs, 1¼ pounds.....	1 28
Olive oil, 1 quart.....	50
Pepper, Cayenne, 1 pound	50
“ black, 30 pounds.....	4 45
“ green, 1 bushel	1 05
Pickles, 3,914	17 50
Prunes, 88 pounds	4 40
Preserves, Cal	1 25
Parsley.....	05
Pails, 1½ dozen	3 30
Rice, 61 pounds.....	3 56
Raisins, 58 pounds	5 57
Stoneware, 126 gallons.....	11 94
Stove polish.....	16
Soap, toilet, 34½ dozen	14 65
“ laundry, 137 pounds.....	10 35
Sapolis, 30 pounds	2 10
Starch, 138 “	6 90
Saleratus	08
Salt, 1½ barrels.....	1 55
“ table	3 30
Sugar, 4,752 pounds	294 19
Spirits of Mint.....	10
Soda, 14 pounds.....	55
Sage	50
Salt rollers, 1 dozen.....	3 00
Sauce, Worcester, 1 quart	35
Tea, 77 pounds.....	32 25
Vanilla extract, 2 dozen.....	2 50
Yeast	7
Total.....	\$704 49

CURRENT EXPENSE—Continued.

On what account.	Amount.
HARDWARE.	
Augers and handles, 10.....	\$6 60
Adze, 1.....	1 75
Apple parers, $\frac{1}{3}$ dozen.....	2 50
Brads, 15 pounds.....	1 49
Bench straps, $\frac{1}{4}$ dozen.....	1 38
Burning brand, 1.....	1 00
Bitts, 17.....	5 55
Boring machine, 1.....	3 25
Barrows, 6.....	9 00
Bolts, 136.....	1 30
Bracers, 2.....	3 50
Bevel, 1.....	35
Butts, 1 dozen.....	65
Can-opener, 1.....	15
Chisels, 3.....	1 65
Counter-sinks, 2.....	20
Chalk, 1 box.....	35
Chalk lines, 2 dozen.....	1 15
Coffee mill, 1.....	6 00
Cess pool, 1.....	4 00
Copper boiler, 1.....	2 00
Compasses, 3 pairs.....	1 05
Catches, 1 dozen.....	85
Chamfer.....	1 93
Drawer pulls, 1 dozen.....	2 76
Faucets, 3.....	1 35
Freezer, 1.....	6 00
Fire-pot, 1.....	2 25
Files, 8.....	1 47
Grind-stone, 1.....	2 50
Gouges, 4.....	50
Glue-pot, 1.....	65
Glue, 10 pounds.....	2 00
Hooks, 1 gross.....	1 00
Hinges, 4.....	60
Hand-saws, 3.....	4 60
Hammers, 4.....	1 90
Hatchets, 2.....	1 20
Ironing-board, 1.....	75
Iron-washers, 1 pound.....	10
Kettle and covers, 2.....	4 45
Kitchen knives, $\frac{1}{2}$ dozen.....	60
Putty knives, 1.....	25
Paring " 2 dozen.....	2 00
Mince " $\frac{1}{2}$ ".....	88
Lawn mower, 1.....	14 00
" roller, 1.....	16 50
Level, 1.....	1 25
Locks, 2 dozen.....	5 50
Mattocks, 4.....	3 25
Morse drills, 2.....	40
Nails, 890 pounds.....	38 25
Oil stone, 1.....	38
Paint strainer, 1.....	60
Pipe, 6-in.....	48
Picture cord, $\frac{1}{2}$ dozen.....	90
" nails, $\frac{1}{4}$ ".....	50
Padlocks, $\frac{1}{2}$ ".....	3 75

CURRENT EXPENSE—Continued.

On what account.	Amount.
<i>Hardware—Continued.</i>	
Plaster braces and rings, 3.....	\$2 75
Poker, 1.....	50
Polishing iron, 1.....	50
Pails, 5.....	2 50
Pot-cleaner, 1.....	15
Planes, 10.....	6 80
Pincers, 2 pairs.....	1 45
Pliers, 3 pairs.....	1 65
Plow, 1.....	5 00
Reamer, 1.....	10
Rubber stamp, 1.....	1 00
Rope, 70 feet.....	7 70
Rakes, 14.....	5 85
Rivets, 4.....	40
Spades, 2.....	1 50
Sickle, 1.....	50
Steel, 60 pounds.....	3 60
Steel riddle, 1.....	50
Scythes and snaths, 2.....	4 40
Screw eyes, 1 gross.....	50
Sand paper, 1 $\frac{1}{4}$ ream.....	4 76
Screws, 44 $\frac{1}{2}$ gross.....	15 49
Sash tool, 1.....	25
Scales, 1.....	29 45
Sash cord, 600 feet.....	4 07
Seal, 1.....	3 50
Shovels, 13.....	9 25
Solder, 20.....	3 20
Staples, 1 dozen.....	35
Set farmers' chisels, 1.....	3 75
Screw drivers, 2.....	40
Saw set, 1.....	85
" vise, 1.....	1 25
Square, 1.....	40
Tapers, $\frac{1}{2}$ dozen.....	38
Turns, 1 dozen.....	2 00
Tacks, 21 packages.....	1 05
Tape, 1.....	1 25
Tool handle, 1.....	75
Tarred paper, 45 pounds.....	78
Unions and couplings.....	2 00
Vise, 1.....	3 00
Washers, 2 $\frac{1}{2}$ boxes.....	1 58
Wire sieve, 1.....	15
Wrench, 1.....	25
Whetstones, 4.....	35
Window guards.....	88 00
White waste, 12 pounds.....	1 50
Wagon jack, 1.....	1 00
Window cleaners, 1 $\frac{1}{2}$ dozen.....	2 00
Wire, 10 pounds.....	1 00
Zinc oiler, 1.....	25
Total.....	\$412 83

CURRENT EXPENSE—Continued.

On what account.	Amount.
HORSE MILLINERY.	
Brushes, 3.....	\$2 05
Bridle, 1.....	40
" front, 1.....	35
Boots, ankle, 1.....	1 00
Combs, 2.....	25
Collar pads, 2.....	80
Fly-nets, 4.....	12 00
Halters, 4.....	4 25
Harness, double, 1 set.....	75 00
" single, 2 set.....	52 00
Hitch straps, $\frac{1}{2}$ dozen.....	1 80
Horse cover oiled, 1.....	2 00
Martingale, 1.....	60
Foot pads, 1 pair.....	50
Saddle and bridle, 1.....	8 00
Sheets, 4.....	4 40
Scraper, 1.....	35
Snaps, 6.....	1 75
Straps, 3.....	1 50
Whips, 3.....	6 50
Total.....	\$175 50
LUMBER.	
Pine lumber, 13,632 feet.....	283 10
LABOR.	
Brick mason, $59\frac{8}{10}$ days.....	241 50
Canning fruit, 189 ".....	93 50
Laborers, $243\frac{1}{4}$ days.....	377 69
Man and team, 67 days.....	231 49
Sodding, $49\frac{1}{4}$ days.....	73 92
Total.....	\$1,018 10
MILK.	
Milk, 2,505 quarts.....	126 99
Cream, 105 ".....	17 17
Total.....	\$144 16
MEDICINES.	
Drugs and medicines.....	105 43
MEATS.	
Beef, roast, 2,062 pounds.....	230 30
" steak, $1,109\frac{1}{2}$ ".....	171 65
" corned, $227\frac{1}{2}$ ".....	18 13
" dried, $4\frac{1}{2}$ ".....	90
Bacon, $39\frac{1}{2}$ pounds.....	4 80
Bologna, $18\frac{1}{2}$ ".....	1 81
Chickens, $15\frac{8}{12}$ dozen.....	49 10
Ham, $761\frac{1}{4}$ pounds.....	96 01

CURRENT EXPENSE—Continued.

On what account.	Amount.
<i>Meats—Continued.</i>	
Lard, 256½ pounds.....	\$22 60
Liver, 98 pounds.....	5 01
Lamb, 490 ".....	59 18
Pork, fresh, 679¼ pounds.....	65 42
" salt, 5 pounds.....	63
Sweet bread, 3½ pounds.....	94
Sausage, 2½ pounds.....	25
Tongues, 7.....	2 80
Veal, 1,014¼ pounds.....	143 65
Total	\$873 18
<i>MISCELLANEOUS.</i>	
Axle grease, 1 dozen.....	1 25
Awnings.....	22 50
Board, Dr. Tobey and family.....	880 80
" horse.....	20 24
Brick, sewer, 3 M.....	21 00
Bags, 4.....	90
Barrels, 3.....	1 00
Baskets, 16.....	6 87
Couplings, 10.....	2 10
Carpet-stretchers, 1.....	2 50
Chamois skin, 3.....	2 25
Clover seed, 10 pounds.....	2 00
Cushions for carriage.....	3 75
Castor oil, 1 pint.....	35
Clippers, 2 pair.....	4 00
Cigars, 50.....	3 00
Coal oil can, 1.....	40
Cement, Portland, 2 barrels.....	6 50
" Louisville, 5 ".....	5 75
Dumb waiters.....	15 00
Dippers, 2.....	25
Drawing paper.....	7 50
Funnel, 1.....	40
Fruit cans, 450.....	72 00
File case, 1.....	4 50
Fire-works.....	1 50
Grass seed, 16 bushels.....	18 95
Hose, rubber, 200 feet.....	6 00
" standard, 300 feet.....	52 00
" nipples.....	43
Hand grenades, 1 dozen.....	15 00
Ice and ice house.....	185 00
Jug, 1.....	10
Lard can, 1.....	3 50
Livery.....	54 75
Lantern globes.....	13
Lantern.....	1 25
Lamp wick, 16 yards.....	80
Metric needle, 1.....	30
Machine needles, 75.....	1 50
" oil, 2 dozen.....	1 50
Measures, 5.....	1 75
Mortar, 90 bushels.....	9 00
Meals in city.....	3 25

CURRENT EXPENSE—Continued.

On what account.	Amount.
<i>Miscellaneous—Continued.</i>	
Nozzles, 4	\$3 30
Notary fees.....	18 18
Oil cabinets, 2.....	15 70
“ can, 1	60
Punch, 1	1 75
Police badge, 1.....	1 75
Pole and irons, 1.....	3 00
Packing	2 00
Pans, 15	5 70
Reducers, 2.....	24
Repairing harness	2 00
“ wheel.....	1 10
“ clippers	50
“ carriage	1 00
Rack, table and trusses	15 00
Springs, 2	40
Setting 4 shoes.....	1 00
Sand, 345 feet.....	7 38
Step-ladder, 1.....	1 90
Sponge, 1.....	60
Services of experts, kitchen and garden.....	27 00
Treating horse.....	6 00
Telegrams.....	32 53
Weights, 3.....	2 50
Total.....	\$1,594 65
<i>PAINTS AND OILS.</i>	
Cylinder oil, 26 gallons.....	16 90
Engine “ 27 “	13 50
British “ 5 “	2 75
Chrome yellow, 1 pound	22
Lampblack in oil, 1 pound.....	20
Ochre in oil, 25 pounds.....	1 13
Preservative, 30 gallons	56 25
Shellac, 1 gallon	3 50
Venetian red in oil, 25 pounds.....	5 00
White lead, 100 pounds	6 25
Total.....	\$105 70
<i>SPICES.</i>	
Allspice, 20 pounds.....	3 10
Cinnamon, 14 pounds.....	3 12
Cloves, 7 pounds.....	2 12
Spices, assorted, 7¼ pounds.....	2 75
Total.....	\$11 09
<i>TELEPHONE.</i>	
Rent, telephone.....	46 50
<i>TRAVELING EXPENSES.</i>	
Expenses	315 10

CURRENT EXPENSE—Continued.

On what account.	Amount.
VEGETABLES.	
Asparagus.....	\$ 18
Cucumbers.....	15 50
Cabbage.....	19 97
Corn, green, 120 dozen.....	17 74
Cauliflower..	14 85
Carrots.....	1 68
Celery, 2 dozen..	1 30
Egg plant.....	4 20
Lettuce	2 63
Onions, 89 ⁵ / ₆ bushels.....	82 40
Peas, 4 ¹ / ₂ bushels.....	6 60
Parsnips, 6 bushels.....	2 40
Potatoes, Irish, 1,129 ¹ / ₂ bushels.....	863 66
“ sweet, 5 ¹ / ₂ “	9 80
Rhubarb	77
Squash, 8 ¹ / ₄ dozen	12 80
Tomatoes, 134 bushels.....	117 99
Turnips, 2 ¹ / ₂ “	1 95
Total..	\$1,176 42

Employees' Pay-Roll.

Name.	Occupation.	Time.		Amount.
		Months.	Days.	
J. E. Kerans..	Supervisor	4	15	\$202 50
Elmen Saylor.....	Carpenter	4	23	190 67
Frank Eck.....	“	1	18	56 00
J. W. Prosser	“	1	4	39 66
Allen Hoar	“ ..	2	.....	70 00
Thomas Duffy.....	“	2	2	5 00
Thomas Wherritt.....	“	2	.....	70 00
Bernard Smith.....	Stableman.....	5	2	153 00
James Larkins.....	“	3	11	84 17
John Haynes.....	Night-watch	7	.....	337 26
Wm. B. Krrup.....	“	6	.....	400 00
Michael Madden.....	“	1 ² / ₅	.....	70 00
John Walter..	“	3	19	109 00
John Herman.....	Laborer	1	9	66 45
John Janson.....	“	2	28	73 33
Christ. Neiceimonger.....	“	2	5	54 16
Louis Neiceimonger.....	“	3	.....	90 00
Vernon Riley.....	“	1	.....	15 00
Aug. Bucholtz.....	“	1	.....	50 00
Frank Baird.....	Clerical .....	.....	.....	70 00
Walter Pickens.....	“ .....	.....	.....	30 00
W. D. Gharky.....	Telephone engineer.....	2	15	125 00
T. W. Day..	Electrical “	2	27	145 00
F. E. Peck.....	Engineer	1	23	132 50
C. Cable.....	Ass't engineer.....	.....	6	8 00

CURRENT EXPENSE—Continued.

Employees' Pay-Roll—Concluded.

Name.	Occupation.	Time.		Amount.
		Months.	Days.	
Louis Eichenaur.....	Upholsterer	1	.....	\$40 00
Thomas Calkins.....	Clerical .....	.....	1	2 00
Sophia Peterson.....	Chambermaid	4	19	64 87
Rhoda Richardson.....	Cook	1	16	27 60
Lida Walter.....	"	4	19	72 50
Myrta Gilley.....	"	2	12	48 00
Kate Stark.....	"	2	12	36 00
Minnie Gleason.....	"	2	6	33 00
Johanna Meyer.....	Laundress	2	25	85 00
Francis Flanner.....	"	2	29	89 50
Clara Spreadberry.. ..	"	3	4	47 00
Maggie Kiel.....	" .....	.....	4	4 50
Mary Williams .....	" .....	.....	25	15 00
Clara Hickman .....	" .....	.....	23	11 50
Lina Horn.....	"	1	.....	18 00
May Kerans.....	Clerk	4	10	90 33
Mary Hoffman.....	Domestic .....	.....	19	17 25
Author Shutenhiem.....	" .....	.....	5	4 50
Florence Gibson.....	" .....	.....	3	3 00
Mary Miller.....	" .....	.....	11	11 00
Mary Joyce.....	" .....	.....	10	10 00
Bridget Curry.....	" .....	.....	2	2 00
Minna Wort.....	" .....	.....	12	12 00
Augusta Wort.....	" .....	.....	12	12 00
Dora Koffman.....	" .....	.....	2	2 00
Maria Haynes.....	Seamstress .....	.....	2	1 00
Esther Troup	"	1	.....	15 00
Total.....	.....	.....	.....	\$1,646 60
Total current expense.....	.....	.....	.....	\$13,397 30

On what account.	Amount.
TRUSTEES' EXPENSE.	
John W. Nelson, expense.....	\$117 70
R. G. Pennington, "	261 70
Wm. E. Haynes, "	102 55
John W. Fuller, "	15 40
D. W. H. Howard, "	99 00
Rent, office.....	230 24
Walter Pickens, Secretary, 5 $\frac{2}{3}$ months.....	566 66
J. H. Spitler, janitor, 2 $\frac{1}{2}$ months.....	12 50
Dora Abanski, janitress, 7 "	35 00
Elevator Ice & Coal Co., ice, 9 $\frac{1}{2}$ months.....	19 00
Jos. Popp, livery	81 50
Spear, Johnston & Co., stationery.....	16 60
Hill & Carpenter, type-writing annual report.....	31 59

CURRENT EXPENSE—Continued.

On what account.	Amount.
<i>Trustees' Expense—Continued.</i>	
Notary fees, postage, telegrams, etc.....	\$40 74
Toledo Transfer Co., hacks.....	10 00
J. C. Williams, curtain for office.....	1 00
Toledo Gas Light & Coke Co., gas.....	5 42
Total.....	\$1,646 60
SALARY OF OFFICERS.	
H. A. Tobey, superintendent, 10½ months	1,050 00
Alfred Wilkin, steward, 1 month	66 66
H. C. Eyman, assistant physician, 3 months.....	175 00
Mrs. M. C. Tobey, matron, 4 months	133 33
Total.....	\$1,424 99
LIBRARY.	
Volumes for Medical Library, 122.....	380 50
White's Manikin, 1.....	35 00
Maps, ½ dozen	5 00
Total.....	\$420 57
REPAIR SHOPS AND TOOLS.	
E. O. Fallis & Co., 3 sets drawings and specifications.....	94 57
Advertising notices to contractors	6 00
Chain tongs, 1 pair.....	9 00
Chisels, 9.....	4 50
Tiles and handles, 16.....	3 29
Galvanized pipe, 167 feet.....	16 03
Pipe cutter, 1	1 50
Reversible ratchet	16 00
Ratchet drills.....	5 25
Stocks and dies, 2	17 50
Taps, 8	11 55
Tongs, 6 pairs.....	6 70
Unions, tees and elbows, 168	14 58
Vise, 1	15 00
Total.....	\$221 40
BARN, STABLE AND HOG-PEN.	
M. J. and Wm. Malone, estimates.....	1,880 29
“ “ “ final.....	109 89
Total	\$1,990 18
COVERED WAYS.	
M. J. and Wm. Malone, estimates.....	12,563 38
Advertising notices to contractors	50 50
E. O. Fallis & Co., plans and specifications	228 32
Printing schedule of bids.....	10 50
Total.....	\$12,852 70

CURRENT EXPENSE—Continued.

On what account.	Amount.
BATH-HOUSE.	
E. O. Fallis & Co., plans, specifications, etc	\$89 65
Advertising notices to contractors.....	14 58
Total.....	\$104 23
ASYLUM CONSTRUCTION.	
Jas. Winans, superintendent construction, 12 months.....	\$2,500 00
John R. Miller, services and rep't as inspector.....	50 00
Wm. Radbone, services as inspector, 2 months	245 00
C. A. Rowsay, " " 2 "	245 00
Fallis & Yost, architects' fees	1,876 30
M. J. and Wm. Malone, estimates.....	73,766 07
" " " final.....	22,830 54
" " " partitions in dormitories	800 00
" " " in administration attic.....	451 00
Brick-layers, 39 days	78 00
Carpenters, 114 "	166 66
Laborers, 71½ "	117 12
Men and teams, 27½ days.....	81 75
Advertising notices to contractors.....	70 00
Butts, 14 dozen	10 65
Brads, 27 pounds	2 25
Bolts, 2½ dozen	1 08
Brass wire, 2 spools... ..	1 10
Ball cord, 1.....	08
Bench straps, 2.....	1 20
Boring artesian well, 125½ feet.....	162 38
Changing pipe in strong wards	8 20
Cleaning and painting bakery and kitchen.....	370 20
Cement, Portland, 12 barrels	41 00
" Louisville, 36 "	43 20
Curve tile, 1 pc	30
Cartage	9 88
Calipers, 1 pair	50
Draw pulls, 11 dozen	2 75
Doors, 28.....	35 32
Fire-brick, 1 M	30 00
" clay, 2 barrels.....	5 00
Glass, 11 boxes	46 57
Galvanized iron, 200 pounds.....	10 00
" " pipe for wells.....	54 10
Glass-cutters, 2	50
Hard tile, 200 feet	22 50
Knobs, shut, ¼ gross.....	44
Lime, 36 ³ / ₁₀ bushels.....	6 47
Lumber, 35,099½ feet	829 90
Locks, door, 2 gross.....	9 00
Mortar hoes, 2.....	1 00
Nails, 600 pounds	16 60
Pulleys, 16	68
Printing schedules of bids and specifications	30 25
Pipes and fitting	125 71
Screws, 25 gross.....	8 54
" bench, 1 dozen	50
Steel scoop, 1	90
Shut bars, 1 dozen	50
Sash tools, 2	10

CURRENT EXPENSE—Continued.

On what account.	Amount.
<i>Asylum Construction—Continued.</i>	
Step ladders, 2.....	\$1 70
Shade fixtures, 300.....	6 75
Traps, 2 pairs.....	2 48
White lead, 1 pound.....	15
Wire, iron, 34 pounds.....	1 36
“ copper, $\frac{7}{8}$ pound.....	53
Ward locks, 2 dozen.....	13 00
Totals.....	\$105,192 76
EMPLOYES' AND FIRE DEPARTMENT QUARTERS.	
M. J. and Wm. Malone, estimates.....	4,409 99
“ “ “ final.....	444 36
Pipe, 700 feet.....	90 00
“ elbows, 16.....	6 40
“ tees, 2.....	1 22
“ Y's, 8.....	4 28
“ curves, 8.....	2 80
Total.....	\$4,959 05
ICE HOUSE AND REFRIGERATOR.	
E. O. Fallis & Co., plans and specifications.....	45 47
M. J. and Wm. Malone, estimates, work and material.....	2,422 42
“ “ “ final.....	356 00
Total.....	\$2,823 89
ELECTRIC LIGHTING.	
E. O. Fallis & Co., plans and specifications.....	504 75
Advertising notices to contractors.....	83 00
Edison United Manufacturing Co., estimates on work.....	5,000 00
Carpenters, 127 $\frac{1}{2}$ days.....	308 50
M. Smith, services as inspector.....	232 70
Marble, 1,100 square feet.....	220 00
Freight.....	44 55
Total.....	\$6,393 50
COVERING STEAM PIPE.	
Asbestos covering, 9,032 feet.....	1,804 04
Covering with same, labor.....	213 39
Hair felt, 310 feet.....	15 50
Asbestos, 150 pounds.....	15 00
Cement, Asbestos, 5 barrels.....	20 00
Tar paper.....	2 00
Total.....	\$2,069 93
TILE DRAIN.	
4-inch soft tile, 15,423 feet.....	276 67
6 “ “ 2,808 “.....	112 35

CURRENT EXPENSE—Continued.

On what account.	Amount.
<i>Tile Drain—Continued.</i>	
3-inch soft tile, 9,000 feet	\$130 50
Laying same	388 95
Total	\$908 47
STONE SIDE WALKS.	
Albert Neukom, estimates on work and material	7,647 19
“ “ final	2,166 00
Advertising notice to contractors	65 75
Stone, 10,333 square feet	170 44
Printing schedule	4 80
Copies of walk plans	10 00
Total	\$10,064 18
GRADING.	
Bernard Fury, estimates on walk	2,260 21
P. & T. P. Garrigan, grading	2,023 31
Laber, 295 $\frac{7}{20}$ days	660 79
Advertising notice to contractors	15 00
Total	\$4,959 31
WATER PIPE, ADDITIONAL.	
M. J. & Wm. Malone, laying pipe	380 50
Water pipe, 50,706 pounds	785 94
“ 322 feet	81 66
Tees, 3	50
Elbows, 1	10
Stop cocks, 1	3 00
Service boxes	2 00
Cartage on pipe	2 00
Total	\$1,255 70
HYDRANTS, ADDITIONAL.	
Hydrants, 10	399 30
“ 1	99 93
M. J. & Wm. Malone, setting same	56 00
Locke & Schultze, setting 1 hydrant	5 00
Total	\$560 23
GATE VALVES.	
Valves, 10	200 00
FIRE DEPARTMENT.	
2-wheeled Champion engine, 1	650 00
Hose-cart for lin. hose, 1	100 00
“ rubber hose, 1	50 00
Ladders, 4	79 80
Rubber hose, 250 feet	200 00

CURRENT EXPENSE—Continued.

On what account.	Amount.
<i>Fire Department—Continued.</i>	
Brass pipe, 1.....	\$4 00
Freight and switching.....	5 00
Total.. ..	\$1,088 80
ROOT CELLAR AND STORAGE ROOM.	
E. O. Fallis & Co., 3 sets drawings and specifications.....	71 57
TELEPHONE EXCHANGE.	
Oak lumber, 3,375 feet.....	93 36
Porcelain insulators.....	2 50
Laborers, 122½ days.....	184 87
Total.....	\$280 73
WATER HEATERS AND CONNECTIONS.	
Oak lumber, 5,204 feet.....	102 49
TREES AND SHRUBBERY.	
Hard maple, set, 50	35 00
Elms, set, 50.....	25 00
Shrubs, 2 dozen.....	8 00
Total.....	\$68 00
DRIVE WAYS.	
M. E. Williams, draughting plans.....	\$52 50
Thomas Calkins, copying specification.....	5 00
George Meissner, " plans	30 00
Printing specifications and schedule of bids.....	12 00
Advertising notice to contractors.....	30 58
Total	\$130 08
CISTERNS.	
Sewer brick, 28 M.....	196 00
Sand, 10 cords.....	42 00
Lumber, 1,393 feet.....	20 89
Louisville cement, 84 barrels.....	88 20
Portland " 4 "	12 80
Pipe, 1½-in., 6 pieces.....	3 20
Soil-pipe in place, 155 feet.....	90 81
Elbows, 6-in., 14.....	16 80
Tees, 2.....	6 30
Running traps, 5-in., 2	7 00
Bends, 5-in., 2.....	2 20
Reducers, 3.....	55
Bushings, 1½-in., 2	25
Laborers, 176½ days.....	329 25

CURRENT EXPENSE—Continued.

On what account.	Amount.
<i>Cisterns—Continued.</i>	
Masons, 26 days.....	\$153 00
Switching to track.....	15 00
Cartage	15 75
Total.....	\$1,000 00

FURNITURE AND FURNISHING.

BROOMS AND BRUSHES.

Brushes, hair, 2½ dozen.....	8 75
“ cloth, 2 “	10 50
Combs, 2 “	2 50
Feather dusters, ¼ “	2 14
Whisk brooms, 1 “	3 00
Total.....	\$26 89

CROCKERY AND GLASSWARE.

Butter dishes, 3½ dozen.....	1 13
“ plates, 8.....	3 30
Bowls, 2 dozen.....	2 00
Bread pans, 1.....	75
Cuspidores, 21.....	7 00
Creamers, 1.....	20
Coffee cups and saucers, 5 dozen.....	7 10
Chimneys, 1¼ dozen.....	1 00
Chambers and covers, 6¾ dozen.....	33 25
Chamber sets, 11.....	88 50
Dishes, assorted, 38.....	15 85
“ saucer, 7 dozen.....	4 25
Glass fruit jars, 107 dozen.....	128 75
Jelly tumblers, 32 “	12 10
Lamps, 35.....	19 09
Lanterns, 2.....	1 50
“ dark, 4.....	10 83
Ewers and basins, 6¾ dozen.....	51 70
Plates, 13 dozen	13 22
Sugar bowls, 7.....	2 35
Spoon-holders, 8.....	1 05
Salts and peppers, 6.....	2 20
Soap slabs, 7¾ dozen	4 67
Stoneware, 28 gallons	2 79
Toureens, 3.....	3 85
Tumblers, 9 dozen.....	7 00
Vinegar cruets, 2.....	1 00
Total.....	\$426 41

DRY GOODS, CARPETS AND NOTIONS.

Alabama plaids, 5021½ yards.....	357 78
Art square, 1	8 00
Blankets, 1,361.....	4,133 75
Braid, 1 dozen..	87
Batts, 4,200 pounds	371 00
Carpet, Brussels, 1,315¾ yards	1,350 79

CURRENT EXPENSE—Continued.

On what account.	Amount.
<i>Dry Goods, Carpets and Notions—Continued.</i>	
Carpet, Ingrain, 2,328½ yards.....	\$1,630 32
“ binding, 58 yards	2 42
Cotton terry, 18½ yards	5 09
Cambric, 42 yards	1 89
Crash, 3,094½ “	290 17
Duck, enameled, ½ yard.....	13
Doyles, 5 dozen	2 25
Darners, 1 box.....	35
Fringe, 3 yards	75
Felt, 5½ “	2 67
Gimp, 49½ yards	5 98
Knitting cotton, 26 pounds	11 05
Muslin, 16,960½ yards	2,406 73
Musquito nets, 10 pairs	3 64
Mats, 5.....	3 35
Napkins, 10 dozen	28 70
Needles, 3¼ M	5 36
“ stitching, 2	40
Pins, 4 dozen.....	1 62
Prints, 5,047½ yards	243 20
Quilts, 1,231	1,057 96
Rubber sheets, 100.....	87 50
Regulators, 2	30
Rugs, 1.....	4 00
Satine, 111¾ yards.....	11 18
Silk, 3½ yards	3 09
Silesia, 20 yards.....	2 70
Scarf, 1.....	1 10
Towels, 21 dozen.....	58 45
Table linen, 1,230 yards	623 21
“ covers, 2.....	8 25
Thimbles, ½ gross	75
Tarlatan, 97½ yards.....	9 75
Tidy, 1	1 00
Tape line, 2 dozen	2 00
Thread, cotton, 6 cord, 79 dozen	43 27
“ linen, 6 dozen	5 15
Ticking, 10,649½ yards.....	1,412 67
Twiss, stitching, 36 pounds	16 50
Total.....	\$14,217 09
FREIGHT, CARTAGE AND EXPRESS.	
Freight, cartage and express.....	372 39
HARDWARE AND KITCHEN FURNITURE.	
Butcher knives, 2.....	60
Broilers, 1.....	40
Bread box, 1	2 00
Basins, 2	50
Basting spoons, 4	70
Biscuit cutters, 2.....	20
Brackets, 5	81
Bowl, 1.....	35
Balance, 1	50

CURRENT EXPENSE—Continued.

On what account.	Amount.
<i>Hardware and Kitchen Furniture—Continued.</i>	
Call bells, 2.....	\$ 80
Carvers, 4 sets.....	5 50
Coppers soldering, 1 pair.....	60
Carpet-sweeper, 1.....	3 00
Cullender, 1.....	30
Cups, tin, 6.....	60
Chisels, 4.....	2 40
Coffee mill, 1.....	1 25
“ boilers, 3.....	5 40
Dippers, 1.....	80
Dust-pans, 6.....	1 75
Egg slicer, 1.....	18
“ poacher, 1.....	50
“ beaters, 2.....	1 40
Emery wheel, 1.....	1 25
Extractor for laundry, 1.....	332 50
Finishing nails, 26 pounds.....	1 93
Fork, 1.....	25
Fruit press, 1.....	4 50
Graters, 2.....	25
Galvanized iron sheeting, 298 pounds.....	17 89
Griddle, 1.....	1 25
Hatchet, 1.....	65
Hooks.....	1 03
Hod, 1.....	60
Kraut tubs, 15.....	45 00
Kettles, 4.....	3 05
Knife, 1.....	65
Iron stands, 2.....	20
Ironing board and stand, 1.....	1 75
Ice pick, 1.....	25
Jacket kettles, 6.....	484 00
Ironer (steam), 1.....	807 50
Match stands, 1 dozen.....	1 00
Machine bolts, 84 pounds.....	14 28
Mop sticks and 2 mops.....	75
Measures, 2.....	35
Manure fork, 1.....	65
Mould, 1.....	1 50
Pounder, 1.....	40
Nail pull, 1.....	3 00
Oil can, 1.....	1 50
Potato masher, 2.....	85
“ fryer, 2.....	2 35
Pans, assorted, 39.....	18 00
Pails, 3.....	2 75
Pot, iron, 1.....	60
Putty, 150 pounds.....	3 75
Range, 1.....	102 00
Rice boiler, 1.....	1 50
Reverse motion, 1.....	61 75
Refrigerator, 1.....	44 00
Rivets, 1 M.....	25
Sewing machines, 8.....	204 35
Sad irons, 6.....	5 40
Steels, 2.....	1 20
Stove, oil, 1.....	2 50
Shovels, 3.....	75

CURRENT EXPENSE—Continued.

On what account.	Amount.
<i>Hardware and Kitchen Furniture—Continued.</i>	
Screen doors, 2.....	\$2 50
Steamer, 1.....	75
Spring hinges, 1 dozen.....	1 80
Strainer, 2.....	50
Slaw cutter, 1.....	45
Sauce-pans, 1.....	85
Stove-pipe, elbow and collar.....	2 55
Sifter, 1.....	25
Sheet zinc, 28 pounds.....	2 80
Spiders, 2.....	1 00
Scissors, 14.....	7 71
Solder, 8½ pounds.....	1 36
Tape measure, 1.....	60
Toaster, 1.....	15
Tacks, 5 pounds.....	69
Tea pots, 2.....	2 75
Turner, 1.....	25
Tea kettle, 1.....	3 00
Waiters, 2.....	1 35
Wringers, 1.....	4 50
Wash-boards, 3.....	90
“ boilers, 1.....	1 75
Waffle iron, 1.....	2 00
Wire cloth, 224 feet.....	5 60
Washers, 49 pounds.....	4 80
Washing machines, 7.....	2,185 00
Water cooler and stand.....	7 50
Vegetable steamers, 1.....	106 31
Zinc glazing points.....	20
Total.....	\$4,560 34

FURNITURE AND UPHOLSTERING.

Bed room sets, 92.....	2,231 60
“ springs, 6.....	38 00
Beds, iron, 100.....	660 00
“ wooden, 62.....	283 22
Book cases, 2.....	27 00
Chairs, dining, 12.....	48 00
“ straight, 1,431.....	1,029 54
“ rocking, 307.....	545 50
Desk, flat, 1.....	15 00
“ rotary, 1.....	94 00
File case, 1.....	15 00
Lounge, 1.....	37 00
Leather tufts, 80,800.....	28 28
Moulding, 252 feet.....	10 08
Mattresses, hair, 5.....	72 00
“ wire, 894.....	1,697 21
Pillows, 1 pr.....	5 60
Tables, dining, 105.....	592 00
“ kitchen, 2.....	5 00
“ par or, 3.....	33 50
Seats for chapel.....	487 00

CURRENT EXPENSE—Continued.

On what account.	Amount.
<i>Furniture and Upholstering—Continued.</i>	
Side-board, 1.....	\$60 00
Wardrobes, 51	515 48
Total.....	\$8,530 01
LABOR.	
Expert services, examining dry goods.....	50 00
“ “ hair.....	20 00
“ “ silverware.....	5 00
Mechanic, making bolts, etc.....	11 51
“ setting up range.....	7 00
Cabinet-maker, repairing furniture.....	2 50
Carpenter, putting up moulding.....	5 00
“ measuring for blinds.....	8 00
Mattress-makers, 235 days.....	386 75
Hair pickers, 247½ days.....	90 47
Seamstresses, 966 “	558 00
Laborers, 131½ “	128 90
Total.....	\$1,273 13
MISCELLANEOUS.	
Advertising notice to contractors.....	194 25
Ash pole, 1.....	75
Brass rod, 1.....	23
Ball wick, ½ dozen.....	30
Blinds, inside.....	500 00
Red lace, ½ dozen.....	25
Cooling room and fixtures.....	305 48
Clothes baskets, 2.....	1 50
Clocks, 6.....	6 60
Cement	2 00
Engine bed and pillow-block.....	18 00
Feathers, 2,011 pounds	800 55
Hair, 12,500 pounds.....	5,038 91
Hamper baskets, 2.....	4 25
Machine oil, 2 dozen.....	2 00
Meat block, 1.....	21 00
Oil cloth rug, 1.....	75
“ 5 yards.....	1 50
Paper baskets, 3.....	3 75
Paper rolls, 2 dozen.....	3 60
Rolling-pin, 1.....	25
Spice boxes, 2	88
Scrub brushes, 2.....	80
Scraps, 2.....	35
Slate, 8 pieces.....	16 28
Tooth-picks, 12 boxes.....	75
Typewriter and cabinet.....	125 00
Transom shades, 912	91 20
Towel rollers, 8.....	2 75
Tar, 1 barrel.....	3 25
Window shades, 1,026.....	515 21
Wash-tubs, 6	4 30

CURRENT EXPENSE—Continued.

On what account.	Amount.
<i>Miscellaneous—Continued.</i>	
Wire baskets, 1.....	\$ 35
“ cord, 3.....	75
Total.....	\$7,667 79
<i>SILVERWARE.</i>	
Butter knives, 3 $\frac{7}{12}$ dozen.....	16 77
Knives and forks, 190 dozen.....	719 65
Sugar spoons, 2.....	50
Tea-spoons, 114 dozen.....	280 75
Table-spoons, 108 dozen.....	540 00
Total.....	\$1,557 67
Total furniture and furnishings.....	38,631 74
<i>HORSES, CARRIAGES AND WAGONS.</i>	
Axle oil, 1 can.....	50
Broom brush, 1.....	25
Blanket, 1.....	5 00
Chamois skin, 1.....	1 00
Carriages, 5.....	1,157 50
Checks, 1 pair.....	1 00
Combs, 4.....	1 00
Duster, lap, 1.....	2 00
“ wool, 1.....	50
Freight and cartage on carriages.....	5 13
Harness, single, 2 sets.....	43 60
“ oil, 1 can.....	50
Horses, 6.....	1,315 00
Horse brushes, 2.....	2 75
Lap-robies, 2.....	8 25
Salt sack, 1.....	50
Scraper, 1.....	40
Sponges, 2.....	80
Traces, truss and collar.....	12 50
Whips, 2.....	2 75
Washers, leather, 1 box.....	1 50
Wagons, 2.....	165 00
Total.....	\$2,727 43

ELEVENTH ANNUAL REPORT
OF THE
BUREAU
OF THE
STATISTICS OF LABOR,
TO THE
GENERAL ASSEMBLY OF THE STATE OF OHIO,
FOR THE YEAR 1887.

STATE OF OHIO, BUREAU OF THE STATISTICS OF LABOR,

COLUMBUS, *November 15, 1887.*

To His Excellency, JOSEPH B. FORAKER, Governor of Ohio:

SIR: I have the honor to herewith submit to the General Assembly, through you, the eleventh annual report of the Bureau of the Statistics of Labor.

Respectfully yours,

A. D. FASSETT, *Commissioner.*

COMMISSIONER'S REPORT.

BUREAU OF THE STATISTICS OF LABOR,
COLUMBUS, OHIO, *November 15, 1887.*

To His Excellency, J. B. FORAKER, Governor of Ohio:

SIR: I have the honor to submit to the General Assembly, through you, the eleventh annual report for the year ending November 15, 1887.

In all the work of this office, it has been my endeavor to regard with the utmost care the spirit and the letter of the law, providing for its operation.* The appropriations have never been sufficient to enable the Bureau to do all the work legitimately required of it within the law. This Bureau may very properly be regarded as an agency for collecting and disseminating information on the subject of labor and education. In the first place, I sought to answer as far as possible the reasonable demands made for information on these subjects, then so important to the material welfare of the people, and second, I did not seek to communicate my own opinions but the opinions of others, and to treat all subjects by the information that come as the reward of the efforts of the Bureau.

When the Bureau of the Statistics of Labor was established in Ohio, the State was practically without recorded history, data or statistics bearing upon the special subjects sought to be treated by its creation.

It has been in existence ten years, and during that time much valuable information has been gathered and placed in the archives of the State, as a basis for intelligent comparison and legislation by those who are to follow in succeeding years.

The plan of securing statistics inaugurated by the first commissioner at the time of the creation of the Bureau in May, 1877, has been continued until the present, as the appropriations made for the support of the Bureau have been insufficient to justify any other. Seven or eight hundred dollars have been invested annually in postage stamps;

*He shall collect, arrange and systematize all statistics relating to the various branches of labor in the State, and especially those relating to the commercial, industrial, social, educational and sanitary condition of the laboring classes.

twenty-five or thirty thousand circular letters enclosing blanks, were sent out asking that the blank be filled out and returned to the Bureau. A few hundred replies would come, and these were placed in a table and made the basis for statistical deductions.

I entered upon the duties of this office on the 20th of March. The report of my predecessor was still in the hands of the printer. I was required to supervise the publication of the same, to read the proof, and attend to all the details of supplying as far as possible, those who wanted them. The supply was in no way equal to the demand, as the twenty-five hundred copies left with this Bureau for distribution was at least one thousand short of the demand. On entering upon the duties of chief of this Bureau, I decided to abandon the old policy of obtaining information by correspondence, and to work through the instrumentality of special agents and personal inspection. Accordingly, blanks were provided that were intended to show the number of industrial establishments in each town in the State, the number of men employed, the number of women employed, the number of weeks in operation, how often the employes are paid, the amount of capital invested, and the value of annual products. Another blank that accompanied this, was to develop the occupation of the persons employed, the wages they receive a day, and the hours they labor per day. In most of the smaller towns of the State, but little difficulty was experienced in securing special agents who would personally visit the different establishments and secure the information desired, but in cities having a population of five and ten thousand and upwards, it was almost impossible to secure a resident who could get the blanks filled properly.

PROPOSED LEGISLATION.

It is perhaps proper to state that the Bureau has been without sufficient authority to compel the full and accurate returns, and I would recommend in this connection an amendment to the law as it now stands. While the great majority of people engaged in manufacturing, the great majority of workingmen and others from whom information is sought, cheerfully respond, there are a few among all classes who refuse to answer questions touching the information desired, and there are some who treat the agents of this Bureau with the utmost disrespect.

The present law in Ohio was substantially the law of New York, until 1885, when it was changed for the same reason a change is now asked in the Ohio law. The following is the law of New York :

SECTION 1. Section 3, of chapter 356, of the laws of 1883, entitled "an act to provide for the establishment of a Bureau of Labor Statistics," is hereby amended so as to read as follows :

SECTION 3. "Said Commissioner shall also have power to send for persons and papers, to examine witnesses, under oath, to take depositions, to cause them to be taken by others by law authorized to take depositions; and said commissioner may deputize any uninterested person to serve subpoenas upon witnesses who shall be summoned in the same manner and paid the same fees as witnesses before a county court, and any person or owner, operator, manager or lessee, of any mine, factory, workshop, warehouse, elevator, foundry, machine-shop or manufacturing establishment, or any agent or employe of such owner, operator, manager or lessee, who shall refuse to said commissioner admission therein for the purpose of inspection, or who shall, when requested by him, willfully neglect or refuse to furnish to him any statistics or other information relative to his lawful duties, which may be in their possession or under their control, or who shall willfully neglect or refuse, for thirty days, to answer questions by circular or upon personal application, or who shall knowingly answer any such questions untruthfully, or who shall refuse to obey the subpoenas and give testimony according to the provisions of this act; provided, that no witness shall against his will be compelled to answer any questions respecting his private affairs, shall, for every such willful neglect or refusal be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than fifty or more than two hundred dollars."

Commissioner Peck of the New York Bureau says of this enactment that it has justified the persistency with which the numerous friends of the measure pressed it, and the gratifying result of its enforcement has proven the wisdom and efficacy of such a statute. The amendment I would suggest to the law of Ohio, is the law of New York above quoted. It is substantially the law of New Jersey and Massachusetts, and wherever it has been tried the result has been satisfactory to all concerned. The amendment suggested will greatly facilitate the work of this Bureau, and will bring about greater results on a much smaller investment of time and money.

Statistics are relied upon as of great value in scientific and economic inquiries, but they may be very misleading and insufficient to present the true conditions when only partially obtained. For this report I made inquiry regarding the wages of employes and in those establishments where labor was well paid, the proprietors promptly responded to all inquiries, while employers of poorly paid labor gave me much trouble in securing this information, and in some cases prevented it. The student of social economics interested in knowing the statistics regarding the rewards of industry in Ohio, could not arrive at a safe conclusion if it were based on reports received only from the more generous employers. Again, there were many manufacturers who felt that the information sought was of too inquisitorial a nature. They felt that it was giving away their business to tell how much capital they had invested, or what the value of their annual products is, but the more thoughtful, and by far the greater number responded truthfully without quibble. Statistics to be relied upon for scientific and economic purposes should contain *all* facts regarding the question of the inquiry. It

would be folly to state the annual product of the State in any given industry, even though a majority of the manufacturers should report it correctly, if a considerable minority of them refuse to answer the inquiry. A law requiring all to give such information as the Legislature has said the commissioner shall collect, would not compel any manufacturer to give away his business for the reason that all data collected by such means or in any way secured would be classified and grouped in totals, and the name of no one would appear in connection with them. To such employers who had apprehension that answering questions might be prejudicial to their business interests, I wrote, distinctly assuring them that the Bureau would preserve the strictest confidence with all correspondents and informers. It is true that the clerks engaged in tabulating the blanks received would have the opportunity of securing for themselves the knowledge of the business affairs of individual manufacturers, but this information would be of no value to such clerks, engaged as they are in grouping the totals from hundreds and thousands of such establishments throughout the State. The public is interested in the answers of but few inquiries as, for instance, capital invested, quantity and value of stock and material used, quantity and value of principal products, number of persons employed, wages paid, capacity of works, weeks in operation and the classification of the labor. The value of an annual exhibit of such statistics of the State can not be overestimated. It would furnish entertaining information for the public, and be of great benefit to capital and labor as affording a solid basis of facts for intelligent legislation.

Not one of the reports issued by the authority of the State is more eagerly sought after or more treasured, than are the reports of this Bureau. In every part of the State I have been inquired of to know why these reports are not bound in cloth. The other States that have a Labor Bureau bind at least a portion of the reports in cloth, and some of the reports received in exchange for the paper covers Ohio sends out are elegantly bound. Hundreds of poor workingmen go to the expense of getting their reports bound after receiving them, and there is a unanimous feeling among this class of people throughout the State, that this should be done by the authority issuing them. I would recommend an amendment to the present law that would require the issuing of at least two thousand more copies than is now authorized and the binding of the same in cloth. In order to curtail the expenditure that would justify this increase, I would recommend a lopping off of the German reports, for the reason that while hundreds have written here for English reports that could not be furnished, not one request has been received for the German. The printing of the German reports is neces-

sarily more expensive than the English, for the reason that the cost of translation must be added.

LABOR'S COMPETITORS.

My attention has been frequently called to the alarming growth of women and child labor in the gainful occupations. Good girls to do kitchen work are hard to find in the cities at three and four dollars a week and board, but girls can be found in the factories, and in the planing-mills running planers, and in the potteries doing men's work, receiving from 50 to 75 cents a day, while men working beside them get from \$1.50 to \$2.00 for the same kind and quantity of work.

Children are crowded into workshops at twelve years, and at fifteen they are able to do a man's work, but their wages are fixed at thirty, forty and fifty cents a day. They are given work at meagre wages until they reach the years of manhood, when they are thrown out of employment to make room for some other boys who will work cheaper, and who have been crowded into the works behind them. I have found boys twelve and fourteen years old, struggling for a livelihood in a room heated 120 degrees, Fahrenheit.

I will speak of this more in detail further on, but I would recommend an amendment to the child labor law excluding from the workshops all children under fourteen years of age, which legislation should be accompanied by stringent measures for its enforcement.

The statistics compiled in this report furnish some idea as to the number of people who are suffering because of enforced idleness. It is evident that nearly all the trades are depressed largely because of over crowding. The poorest paid trades are the ones most crowded. Three agencies, in my judgment, have combined in producing this result, viz.: Foreign immigration, foreign goods competing in our home markets, and invention. The latter agency is what opened the doors of the workshop to child and women labor. In the old days before machinery supplanted the mechanic, it took a man to drive the jack plane, shape the iron, and construct the vehicle; now a delicate child guiding a machine can do most of this work. The spoke of a buggy is made by machinery in one place, the hub in another, the axle in another. One person learns to make a spoke, another the hub, another the axle, but no one learns to make them all. Invention has centralized the industry, and the effect makes it more difficult for labor to find remunerative employment. It has not only made the productive power of each person intensely greater, but it has brought new productive forces as competitors in the gainful occupations. By reference to the tables some idea can be had of the

number of unemployed. While no thorough investigation has been made of this subject, conclusions can be drawn from the number of weeks industrial establishments were in operation. This shows an average of about 45. But that is not a safe deduction, for the reason that in making returns the number of weeks any department was in operation was invariably given as the time the concern was in full blast. Some of the larger establishments reported as having been in operation 52 weeks were idle holiday week, or at least a week of holidays. Some one or two of the numerous departments were idle all the time, though on the whole some part of the establishment was in operation the year round; hence the return of 52 weeks. An investigation was had of three concerns reported as having been in operation 52 weeks. It was found that these three establishments employed in the aggregate 600 men. They were idle only on legal holidays. The conclusion from the face of the returns is that it was possible for the 600 employes to work 312 days each during the year. The investigation, however, developed that 20 of these men worked four months, 50 others worked but five months, 90 worked six months, 105 worked eight months, 110 worked nine months, and 120 ten months. So that only 105 of the 600 worked the whole year. These 600 employes, therefore, instead of working 7,200 months, as the returns indicate, worked but 5,160 months, or an average of but eight and one-half months each. As this occurred in establishments that worked 52 weeks, it is evident that in establishments working less than 52 weeks the possibility is correspondingly reduced below the eight and one-half months. It is safe to estimate that the workingmen of Ohio do not work an average of eight months each out of the year. Some authority has fixed the ratio of enforced idleness as two out of ten. There are very few people in Ohio who can not get something to do a portion of the time. It is absurd to assume, as some writers have, that there are 2,000,000 working people in the United States who can get nothing to do the year round. The statisticians, therefore, who have furnished figures, do not pretend that two out of every ten individuals can get nothing to do, but they mean, what the figures above presented prove, that if the census of the workshops of the country could be taken simultaneously it would show two idle persons out of every ten. I have no hesitancy in saying that this estimate of enforced idleness is too low. It is certainly too low for large establishments where hundreds and thousands are employed, but it may be too high for smaller establishments. These smaller establishments have in the aggregate the largest number of employes and furnish more regular employment than the larger ones.

I made an investigation of the cigar and stogie-makers of the city

of Columbus, and the result shows an alarming extent of enforced idleness. There are fifty establishments that employ in the aggregate nearly 1,000 people, mostly girls and boys. Less than 100 men are employed. The Cigar Makers' Union is numerically weak, wages low, and work slack. Many are employed in this industry at \$1.00 a week; \$10 a week is the highest, and the average is below \$1.00 a day.

There are 1,800 names on the books of Columbus Carriage, Buggy and Wagon Works as employes. At no time are they all employed, and a good portion of the past year, 1,000 of the employes of these concerns were idle. I expect to investigate this question more thoroughly next year. In view of the information at hand, I am strong in the conviction that the ratio of enforced idleness, developed in the three prosperous establishments investigated, (four out of twelve) is not wide of the mark.

The three causes above enumerated have united in producing this result. Some localities and some trades view invention with apprehension and alarm, but more is to be feared from ignorance. The machine is a blessing that would lighten the toil of all, that would serve all alike, if labor was sufficiently intelligent to meet it with an organization that would reduce the hours of labor to correspond with the increased facilities it affords. The right to labor is being denied. Thousands of able and willing men and women who do not recognize the fact that they are deprived of a right and not simply debarred a privilege. They stupidly believe the assertion that there has been over-production, or that as a nation we have been living beyond our means. They are prone to believe that their misfortunes have been increased by, or are wholly due to political troubles, and they foolishly undertake to remedy the evil by the ballot, where organization is destroyed and education impeded; instead of by organization, which promotes education, now more than ever needed by workingmen. There is not an idle workingman in this country who, in his own person, is not a living witness of the over-production lie. No matter what his trade or calling, he would produce something that would be gladly taken by another; providing, that other could also produce and thus have something to give in exchange. The machine and the mechanic will produce 6 times the amount that the mechanic alone could produce, but the mechanic gets none of the increase. The owner of the machinery takes that, and when with the machine he has filled his warehouse, the machine and the mechanic are stopped, and the mechanic can starve because there has been over-production—that is, more than people who want have the means to purchase. The committee from the Royal Agricultural Society of England visited 140 farms worked by steam tillage, and they reported that each farmer could do with from ten to twenty horses less than

before, and that the yield of bushels per acre had increased. As the twenty-horse-power engine does not require so many men in attendance as 20 horses, the men are superseded with the horses. The farmers get more wheat at less cost but the laborers are rendered less able to buy wheat. Many of them are driven into the slums of the city, become inmates of prisons, or objects of charity.

What the workingmen want and what they should have is regular employment for all who are willing and able to work at eight hours a day. A reduction of the hours of labor would not diminish the amount of the national wealth, as some political economists assume, but it would spread the employment for its creation over a larger area, and slightly alter its distribution in favor of the poor. If ten hours a day sufficed in the dark ages to make some people rich, and feed, clothe, and shelter the poor, one would think that a little less would suffice for the same purposes now when the productive power of the machinery of the United States is more than equal to the labor of 500,000,000 human beings.

The workingmen of this country must learn that shorter hours bring good wages just as short crops bring high prices for potatoes. They must also learn that when the fathers crowd their little boys and girls into the factories, they place therein the agencies for dragging themselves down in their wages.

Again, workingmen must learn the difference between political questions and party politics. They must come to view the questions of labor from the workingmen's standpoint, and not the politician's. The labor question is a question of labor, of life—of opportunity for the poor. Workingmen must learn to oppose all who oppose labor measures, and to never oppose labor measures just because their party concludes to. They should move in one solid body to secure legislation that will restrict immigration. The United States can no longer advertise itself as the home of the oppressed of all nations. India's 250,000,000, working for \$2.00 a month, may conclude to come. Egypt's seven cents a day labor may accept the invitation. As there is no room in this country for the pauper labor of the world, there is no room for the manufactured product of foreign countries.

The reports of the treasury department show that \$38,000,000 worth of iron alone was brought into this country the first eight months of the present year. That manufactured product has a more injurious effect upon workingmen's wages than the landing upon our shores of as many poorly paid laborers from foreign countries as would be required to manufacture it here. A conservative estimate places this number at 200,000. Here is enough iron manufactured in foreign countries coming to this country during the first eight months of this year, to have

employed 200,000 iron workers, coal miners, ore miners, and limestone workers, eight months. This vast product—this product of 200,000 foreign laborers, is allowed to enter our markets and strike down to idleness 200,000 of our own people, as fully that many are idle in the coal and iron, the ore and limestone interests of the United States.

While gathering statistics at Findlay, the chief clerk of this Bureau visited the Mask Factory there. As it was the only establishment of the kind in the State, the proprietor was written to and asked where the large number of masks annually consumed in this country were made. The reply came that nearly all were imported, his being the only manufactory of the kind in the United States. In reply to another letter of inquiry, the letter here appended was received.* There are many other industries in this country languishing or that are totally destroyed because of foreign competition. Nearly all the ties used in binding up the cotton of the South comes from England, because Congress has stupidly refused to place a duty on cotton ties, that would enable the home manufacturers to even meet the foreign product.

In and close around Pomeroy \$2,000,000 are invested in the salt industry, which is greatly depressed. This industry could be restored to its old time vigor by excluding the foreign product. A little further up the river at East Liverpool \$2,000,000 are invested in the pottery industry. The annual product is nearly \$2,000,000. This industry is greatly depressed now, and the growth of Liverpool retarded for the reason that the duty on imports is levied in such a way that the product of foreign potteries coming into the United States is greater than our entire production.

I thus call attention to this subject, not so much with a view of securing legislative action as to direct attention to a discussion of it in view of the striking illustrations found in this State. Among the curious and interesting features of the record of the treasury department for the past year is the remarkable increase in importation of railroad iron. While the iron and steel manufacturing business of this country

* FINDLAY, OHIO, *June 30, 1887.*

A. D. Fassett, Columbus, Ohio:

DEAR SIR: In reply to your letter of the 27th, we would say, first that the duty on our class of goods (masks) that are imported into this country is so low that the foreign manufacturers place goods in our markets below what we can produce them for. Our employes are paid from \$3.00 per week to \$9.00 per week, (this includes girls and boys), and work ten hours for a day. The goods from foreign countries (principally Germany and France), are made by employes who work 14 or 16 hours per day, and receive about one-half the wages for a day's work that we pay. Then we are informed by parties in the east who deal extensively in our class of goods, that importers fill up large pieces such as whole heads, horses bodies, etc., with smaller pieces thus evading duty which, were their goods examined closely by the custom officers, would make a material difference. There is now sold in this country upwards of half a million dollars worth of this class of goods of which we are making only about \$8,000 to \$10,000 worth. This can be remedied by placing a duty on the foreign goods of 20 per cent. ad valorem in addition to what is now on them.

Mask Manufacturing Company.

has been "booming," and we have been boasting that our iron industries were developing to such a degree as to render us independent of the entire iron world, "our friends, the enemy," have been quietly filling our custom houses and our markets with railroad iron, and English rails are being spread upon our railroads to an extent that alarms the home producer. The figures of the year's work in this particular show an importation of nearly 75,000 tons. Chief Clerk Whitney, of the National Bureau of Statistics, has been giving this branch of the subject special attention, and speaking of the curious development, says: "The prices of English iron and steel rails in England suddenly went down from about \$30 per ton to about \$20, and the result was that it became possible to ship them here, pay the tariff on them, and yet come into competition with our American rails. The importation of steel rails for the year was nearly seven times as much as that of the preceding year. The railroad iron imports are curious, but not much more so, than a good many other articles in the iron line. The last year has been one of remarkable activity in the iron trade except the first five months. Yet the figures made up in the Bureau of Statistics show an importation of about \$50,000,000 worth of iron and steel and articles manufactured thereof. This will be a remarkable showing, for it will be an increase of 25 per cent. over the preceding year, and greater than any former year, with perhaps four exceptions. The largest item in the year's imports, under the head of "Iron and Steel Manufacturers of" is tin. The value of this article alone imported during the year amounts to \$17,000,000. Besides the steel rails imported during the year, which were an increase of 40 per cent. over last year, there was a like increase in the importation of "ingots," blooms, slabs, bullets and bars of steel. The record shows the importation in this line during this year, as being nearly \$6,000,000 in value against less than \$2,000,000 in the former year. In pig-iron the proportions have almost doubled during the past year, and in scrap-iron for manufacturing, the importations of the past twelve months are five times as great as those during the preceding year. The importation of iron in the year just closed, as stated above, amounts to nearly \$50,000,000. Of this \$1,000,000 is pig-iron; \$3,500,000 scrap-iron, fit only to be remanufactured; steel railway bars, \$1,500,000; bar-iron, \$2,000,000; ingots, bloom, etc., nearly \$6,000,000; tin plates, \$17,000,000; wire and rods, \$4,000,000; cutlery and fire-arms, \$2,000,000 each. The duty paid on this amounts to \$11,000,000."

SCHOOL LEGISLATION.

Complaint having reached this Bureau regarding school books and other school supplies, I undertook the work of investigating them. I

sent a circular letter to 400 superintendents of schools throughout the State, inquiring the cost of books and other necessary school supplies in their respective localities. Although stamped return envelopes were furnished, and the superintendents were written to three times, only 75 replies came. These show that the retail price varies, for example, all the way from \$2.96, ten per cent. off the wholesale price of the Eclectic Series of readers, to \$3.60. They show, too, that the cost of stationery and supplies such as tablets, pencils, pens, paper, sponges, etc., is a very large item furnished as they are at from 100 to 500 per cent. profit. Many towns of the State have taken advantage of the law*, permitting boards of education to furnish books and to sell them to the pupils at cost. In this way the Eclectic Series of readers are supplied at \$2.48.

One town purchases the books and supplies the scholar free of cost. I would recommend that the law be amended so as to make it compulsory for boards of education to supply the schools at cost instead of leaving it optional or permissive as at present. I would also recommend that the school stationery and supplies be furnished free. Cincinnati for many years has purchased these school supplies in wholesale quantities, and furnished them to the pupils in the schools free of cost. This plan is found to be a great convenience in the operations of the school as well as an economical arrangement. These necessary school supplies when purchased in quantities, can be had at greatly reduced prices as compared with their purchase at retail by the pupils. By purchasing them in quantities at wholesale prices and furnishing them free to children in the schools, a great saving to the people would be effected, the convenience of the schools would be served, and a vexatious tax removed from many poor and worthy parents.

Another conclusion derived from the reports is that while there is a substantial degree of uniformity in the use of school text-books throughout the State, there are many towns and districts having books in use different from those in general use in their respective sections or counties. In many counties, by voluntary action of teachers and boards of education, commendable progress has been made towards securing uniformity in text-books, and it is hoped that this movement will be continued until uniformity is secured throughout the State, and

*Section 4020. Each board shall determine, at a regular meeting, by an affirmative vote of a majority of all its members, the studies to be pursued, and the text-books to be used in the schools under its control, but no text-book shall be changed, nor any portion thereof altered or revised, for five years after its adoption, without the consent of three-fourths of all the members elected to the board, given at a regular meeting; and all branches shall be taught in the English language, and each board of education is authorized to purchase direct from publishers or dealers at the lowest wholesale or contract prices, such necessary school text-books and other school supplies as may be determined by the board, and furnish the same to pupils in the schools under its control at cost price, and each board of education is authorized to pay for such necessary school text-books and other school supplies out of the contingent fund at the disposal of the board.

a great source of complaint, trouble and expense is removed. In this connection I would recommend that the law be amended so as to require boards of education to furnish an outfit of school books to school children, of parents moving in from districts where other books are in use.

There are thousands of children of poor parents who are kept from school because they have not the means of purchasing the books and school supplies required. The law* authorizes boards of education to supply such scholars free of cost, when it is shown to the satisfaction of the board of education that the parent or guardian is indigent. Many such shirk from the ordeal and notoriety of establishing the proof of their poverty "to the satisfaction of the board of education," and many of these boards are not actuated by a spirit of liberality in dispensing these small but necessary helps to the poor in securing their children a good education. It being the duty of the State and of good citizens to furnish the means "freely and without price," to every child to obtain a good practical and useful education, I would recommend an amendment to this law, making it the duty of boards of education to furnish books free whenever, in the judgment of the teacher, it is hardship to the parent or guardian to furnish the same. In this connection there is another matter of importance that should receive the attention of legislators. The legislature has enacted that when a book has been adopted it shall remain in use for five years, except where the board of education by a three-fourths majority orders otherwise. A great portion of the burden now resting upon the school patrons of the State results from too frequent and unnecessary changes of the text-books. I grant that occasions arise where a change may be desirable within the time prescribed, but experience has shown that the three-fourths majority necessary to change the books within five years are often obtained when there is no necessity for the same. I would therefore recommend amending the law so as to prohibit a change of text-books oftener than once in five years, except by *unanimous* consent of the board.

Section 4023, of the Revised Statutes, makes it compulsory for every parent, guardian or other person having charge or control of any child between the ages of 8 and 14 years, to send such child to the common school for at least 12 weeks in each year. This law is practically a dead letter for the reason that no provision is made for its enforcement. I would recommend that it be made the duty of the clerk of the board of education to prosecute all violators of the provisions of this act, and that

*If it is shown to the satisfaction of the board of education that the parent or guardian has not the means wherewith to purchase for his child or children the necessary school books to enable him to comply with the requirements of this chapter, the board may furnish the same free of charge, to be paid for out of the contingent fund at the disposal of the board.

he receive proper compensation for the same. To this end I would recommend striking out the word "affadavit," in section 4028, of the Revised Statutes,* and substituting the word "information." The reason for this change is that many who know of violators of the law, shrink from making an affidavit, who could willingly furnish "information," as to offending parties.

The report of the Commissioner of Common Schools shows that there are 1,102,770 children of school age in Ohio, and that the number in regular daily attendance is 517,844. I am fully persuaded that if the suggestions herein made are acted upon by the legislature, the percentage of school youth in attendance will be greatly increased.

THE TOPICS SUMMARIZED.

This report embodies the result of a personal visit by some one of the numerous representatives of the Bureau to every factory and workshop in nearly every city and town in the State. This has involved great labor, and some expense, but the results compiled fully justify the outlay. There is scarcely a person in the State who can not find here something to interest and instruct. He can find not only the wages he receives, the number of hours he labors daily, the cost of the necessities of life, and much kindred information regarding his community, but he finds this same information regarding the working people in every community of the State. The person who is interested in knowing whether the labor organizations are beneficial to the workingmen or not, can here find the information he seeks. The organized trades can be separated from the unorganized, and the wages and hours of labor compared. The wages paid in towns where labor organizations are strong can be compared with the wages in towns where there are none. The student of social economics can find herein the basis for calculation and deduction regarding the entertaining though vexed question of labor and capital. Although the appropriation was small, the information secured is varied and searching.

Through the kindness of Hon. Carroll D. Wright, Chief of the National Bureau, I am able to furnish some most interesting tables regarding strikes in Ohio during the last six years. Every strike that has occurred is given, together with the towns effected, the number of

*Section 4028. The clerk of the board of education shall prosecute every offense against the provisions of this chapter, when a member of the board of education, or any tax-payer of the district of which the offending parties reside, files with him an affidavit setting forth the facts which constitute their offense.

men involved, the cause, the result, the amount they cost, the loss to the workingmen, the loss to the employers, and other information that will be valuable for future reference.

The chapter devoted to co-operation and profit-sharing can not fail to be interesting, instructive, and useful. The coal miners and mine operators have here more information regarding themselves, their wages, the hours they work, their organization, etc., than was ever before secured.

There has been some delay in getting this report ready for the printer, owing to the fact that for the last half of the year the clerical force has been nowhere equal to the labor that was imposed upon it. In this connection I desire to testify to the industry and energy displayed by chief clerk, George D. Gessaman, whose large experience and familiarity with the labor interests has rendered him a valuable adjunct to this office. The entire clerical force, in fact, have performed their duty in a manner deserving of commendation. Valuable assistance has been rendered by all the special agents, especially by J. M. Bloomer, of Toledo, and L. F. Decker, of Columbus, to whose energy and aptitude for the work, I am indebted for the complete reports obtained in many cities where local agents could not be secured.

A. D. FASSETT, *Commissioner.*

PART II.

CO-OPERATION AND PROFIT-SHARING.

The mission of the Bureau of Labor Statistics is something more than the publication of a report with a view of pandering to the prejudices of any portion of the people ; of vastly more importance than it is for one of the departments to keep up a communication with the corporations and the labor organizations of the State. The mission of the Bureaus of the Statistics of Labor is to furnish the people with reliable information concerning the working classes—information that bears upon the all important question of a proper division of the rewards of industry. There has always been too little known of what in these modern times may be called the science of social economics. The people have been educated in the school of Adam Smith, who laid it down as the basis of sound political thought, that the man who has money to employ labor is an autocrat, entitled to dictate all the terms of its employment. We have been educated to understand that labor is a commodity to be bought and sold as any other commodity, differing only in this, that with labor the buyer has the right to dictate the price and all the terms of the contract. Public sentiment thus has given capital the absolute right of dictating to labor all the conditions of its employment. With such a line of thought, the foundation of our social superstructure, taught in the public schools, in the colleges of the country, and recognized as right in all the ramification of business, there is little wonder that the science of social economics, as now recognized, was so long neglected.

The Labor Bureaus, few as they are in number, and financially weak as some of them have been, have gradually pointed the way through a wilderness of misleading thought towards a proper, just and equitable solution of the labor problem. Slowly and surely the figures that have been gathered have been breaking down the prejudices built

in ages of industrial darkness, until the schoolmaster is beginning to recognize that labor has some rights that capital is bound to respect, and co-operation and profit-sharing is receiving the attention of the wisest and best men and women of this country. Students of this new science of social economics, which seeks a just distribution of the rewards of industry, are using the Labor Bureau statistics as the basis for determining the equitable distribution of the joint earnings of labor and capital.

One of the encouraging signs of the times is the attention that workingmen and labor organizations are giving the subject of co-operation. Co-operation and profit-sharing seem destined in the near future to supplant the more radical thought that has prevailed in labor circles. Not only are the workingmen turning their attention in this direction, but teachers and authors of the new science of social economics are fast beating down the barriers of thought erected by Adam Smith, and are establishing a new line of thought that promises justice and equality for all. Workingmen as a rule embrace more naturally the easily understood and practical plan of co-operation, while theorists, teachers and the more learned incline to profit-sharing as the most natural and practical solution. Without taking sides or expressing an opinion on this subject, I have selected two of the most conspicuous advocates of an equitable division of the rewards of industry, and here give space for their arguments—one for co-operation, the other for profit-sharing. Professor Folwell, who occupies the chair of political economy in the State University of Minnesota, delivered an address on the "True Nature of Profit" at the meeting of Chiefs and Commissioners of Labor Bureaus, held at Madison, Wisconsin, in June, 1887. The paper teems with valuable thoughts, attesting a knowledge of the labor problem seldom encountered in the higher walks of scholastic life. I have selected it because, in my judgment, the Professor makes as strong a case for the profit-sharing advocates as can be had.

PROF. FOLWELL'S PAPER.

No practical question of economics is more agitated at present than that of profit-sharing. Labor and capital both are looking to profit-sharing as a possible reconciliation of the perennial discord which has vexed and parted them.

While listening to the able and earnest papers and discussions of this convention upon this topic, it has occurred to me that such discussions would be more fruitful if the true nature of profit was understood and kept steadily in mind.

The subject of profit falls in the department of distribution, one of the four traditional primary subdivisions of political economy. Any discussion or controversy about distribution of itself postulates three things: first, a mass of products belonging in some sense to a producing community; second, a body of co-operating work-

ers, entitled in some way to regulate the division; and third, a fair and equitable partition.

Unless these points are mutually granted and assured there can be no occasion for discussion. Distribution, then, is a social business. Property is a trust and society is its guardian. Human society is essentially co-operative in production, and must be to some extent socialistic, in the good sense of the word, in distribution.

On the basis of these postulates, many plans have been proposed for the actual distribution of wealth and services. These plans are apparently reducible to three types—distribution according to works; distribution according to needs; distribution according to sacrifices. Professor Cairnes, in his "Leading Principles" has shown how unworkable these are. They are all, in lawyer's phrase, "void for uncertainty." There is no standard of works, of needs, or of sacrifices, nor is there any infallible tribunal to which appeal may be made. In some smaller and isolated communities the common product may have been assigned to the co-operators according to some one of these principles, but no great people have divided wealth by any of them.

Still, while philosophers and economists have been vainly struggling with the problem of distribution, the working world has always been solving it. From the beginning of time the wealth of the world has been distributed.

This has been done by what we call competition, which is simply the social right of every co-operator in production to take what he can from the mass of produce, subject to the equal right of every other to do the same. Among barbarians this right may degenerate into mere unregulated plunder. The civilized man has learned to find in the right of all the guarantee of the right of each.

The chief merit of the competitive plan of distribution is that it works, and works of itself. No cabinet, or council, or syndicate is needed to put it into operation. It adapts itself to all conditions of men. It is highly favorable to liberty, and is the keenest stimulus to industry and frugality. Given perfectly just men, competition will give just results, and no plan will do that while men are unjust. Competition can never be disused, for the simple reason that without it values can never be determined. Valuations become values only by the higgling of the market.

As a matter of convenience competition has been spoken of as the sole means of distribution. Such a representation needs correction. A study of the subject will show that there is a considerable portion of the economical field in which competition is so much weakened that its effects may be neglected, like remote decimals in money calculations. A considerable amount of wealth is distributed by non-competitive means. Professor J. B. Clarke, in his ingenious work on the "Philosophy of Wealth," has shown the desirability of carrying over additional increments from the competitive to the non-competitive field. There were, as shown by the census for 1880, fifty millions of people in the United States, of whom seventeen millions were engaged in gainful occupations. Two-thirds of the whole population are thus in greater or less degrees, liberated from the struggle for existence. Competition is active in the proximate division of produce among producers. It is feeble, often imperceptible, in the ultimate assignment of goods to individual consumers. Furthermore, society devotes large masses to the general welfare, in advance of private distribution. The State is allowed to levy and collect taxes and duties, the church is made almoner of vast sums devoted to religion, charity and education. The German economists distinguish "public" and "caritative" distribution from "private" distribution.

Let us now attempt an analysis of distribution, with a view to eliminate profit from its complications.

Let us assume that it is settling day with any economic community. It is immaterial for this purpose to what political unit such a community may correspond. Here is a mass of products, the result of the joint economic activity of the community. We may represent it graphically by a square figure.



1

The first elimination is for public, the second for charitable or caritative uses. Our figure stands:

Taxes.
Charity, etc.

The next stage of partition is that between labor and capital; labor taking wages, capital rent for land and interest for money or money's worth.

But this partition exhausts the whole dividend, and profit has not appeared at all.

In geometry a false conclusion to a correct demonstration argues the falsity of some hypothesis or postulate. And this is the mischief here. We assume a general settling day, and a definite sum of products. Neither of these are justifiable. Society does business on a perpetual "running account." There is and can be no universal clearing. Affairs go on like a perennial game of pool, in which individuals are continually going in and passing out.

2

Again, the mass of produce is never an ascertainable amount. Sometimes it is nothing at all, or even a minus quantity. The ship has gone to the bottom, the mine has "petered out," the harvest has been ruined by the tornado, the town has been swallowed by an earthquake or engulfed in a tidal wave.

Taxes.
Charity, etc.
Wages.
Rent.
Interest.

At other times the returns of production may exceed the dreams of the most ardent. Vast mineral deposits may have been brought to daylight, a new invention may have given man a new mastery over the forces of nature, the barns of a continent may be bursting with plenty. Most employments have more or less of the lottery element in them. No man can foretell the outcome of a season's industry or a business venture.

3

The returns of a production, then, can not be represented by a square. A figure like 4 will serve better.

	Loss.	Profit.

4

The simple partition illustrated by figure 3 is now seen to be inadequate, because there is a new and fluctuating element in the actual dividend. Fortunately we are allowed to drop from present consideration the cases of loss, when returns are insufficient for the average reward of the co-operating parties. Industries which do not "pay" are abandoned, when losses are not balanced up by gains. A "margin of profit" may be assumed as the general fact, but the width of that margin is an element of uncertainty entering into every social and individual transaction.

The question now arises, to whom shall this unascertained margin of profit belong? "Why, to all," hastily responds some economist of the closet; "let all parties come in for a fair share of this unearned increment. Take your figure 3,

Taxes.	PROFITS.
Charity, etc.	
Wages.	
Rent.	
Interest.	

5

extend the several horizontal lines, and you have a correct representation of just distribution." At the first glance this seems a simple and charming scheme, but it will not stand the light of the hard outside world of facts and business.

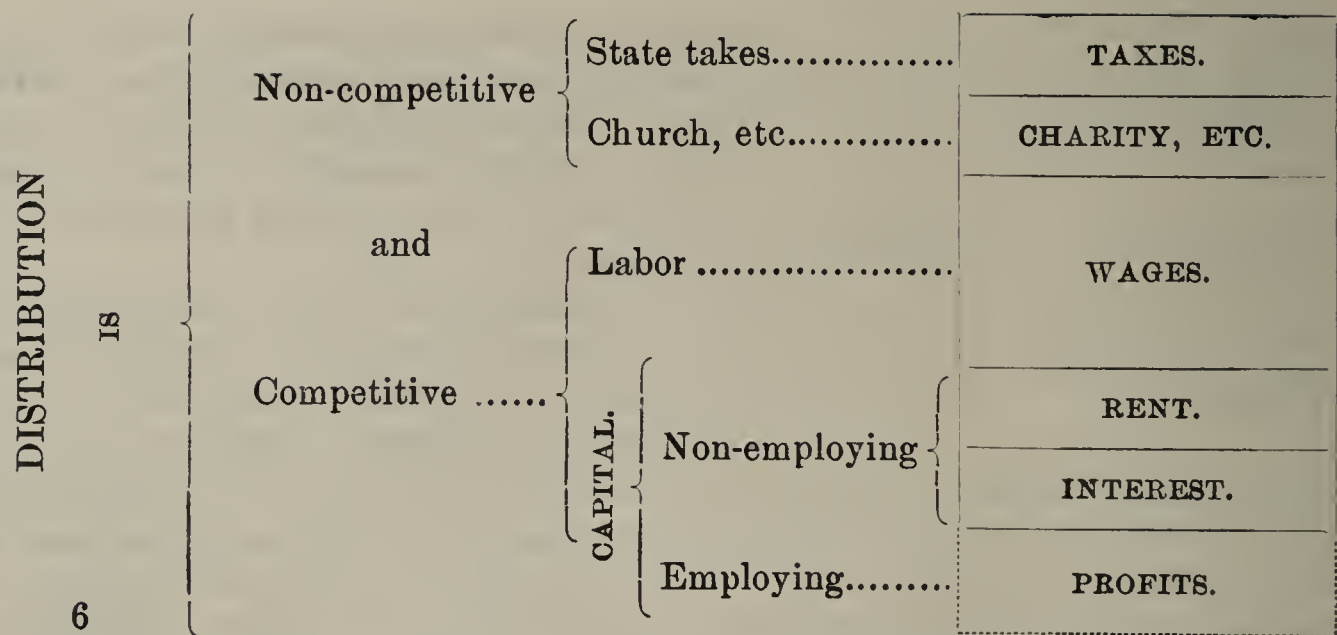
Let us look over the list of our parties and see how they severally stand affected towards the margin of profits. First, the State. She demands a contribution sufficient to cover the

public expenses, whether crops be plentiful or scanty. Then the church, asking ready money to prosecute her beneficent work, and desiring no interest in business ventures. Next labor, needing daily bread, distrustful of the future, unwilling and generally unable to wait for returns from unfinished enterprises. Finally capital, in two detachments, land owners and money owners. These want birds in bushes less, if possible, than the laborers. They lay no claim to the margin of profit, content with a certain income of rent or interest. So it appears that all the parties so far brought on the stage decline any share of profit. Why? Simply because the acceptance of a share in profit means sharing in possible losses, or at least in uncertain amounts of gain. Men desire certainty and present gratification. They hate postponement of pleasure and indefinite income. We have, however, not far to seek to find a man who is ready and desirous to take possession of the margin of profit. Let us call him the "business man." Seeing the other co-operating parties so anxious for certain shares in distribution, and so loath to take chances, he says to labor and capital: "I am the man you want; I will pay a fixed rent for land, a certain interest for money, definite wages for labor of all kinds. I will take all the chances of loss, but you must allow me to hold as my own any margin of returns due to good fortune, my foresight, courage and skill—in short I will do business for profit." To this proposal all others happily agree. Laborers, land owners, money owners, make the business man their assignee of profit, in consideration of a certain share in hand paid and exoneration from possible loss or probable diminution of gain.

This arrangement is in its general form equitable, and were it not also generally acceptable could not continue to exist.

The business man, of course, exerts himself to widen as far as possible the margin of profits, often by means indefensible among honest people. In making their assignments to him, the laborers and lenders have conveyed not merely their interests in some reasonable average margin, but they have invested him with full power to swell his profits to any possible magnitude, by prudent choice of enterprises, by skillful conduct of his business, by economies in material, and, perhaps, most of all, by shrewd use of the markets. All these may swell profits, but they are not the ground of profits. They do not make profits to be, but they make them to be more or less. Commonly, the business man is able to conceal from his co-operators the amount of his profits. All trade is regarded by those engaged in it as an "art and mystery." Speculation, a disease of honest trading, has for its object to mass and engross profits, without having rendered any return to society in the way of services.

We may now, I think, attempt a graphic illustration of economic distribution which will show where profit belongs.



The employing capitalist or business man is the assignee of profit in the present condition of the industrial world. In this statement I differ from the school of Gen. Francis A. Walker, who, following French example, teach, apparently at least, that profits go to an empty-handed "entrepreneur," manager or "captain of industry," and are the reward of mere managing ability.

The "entrepreneur" must be a capitalist. He must possess some wealth as a basis of credit, otherwise he is a mere employe, receiving wages of superintendence. Without some capital it is impossible for him to take the risks of business; and no man can ever get profits who does not in fact take the risks of loss. He alone who can put a margin of realized wealth can take those risks. No empty-handed manager or boss can do that.

It follows as a corollary from this discussion that laborers can not expect, nor justly demand any share in profits, until they are in a condition to take the risks of business. Any division of money among employes by generous employers is either a mere bonus or an addition to wages.

Co-operation, making the same men laborers and capitalists, employers as well as employes, seems to be the only means by which laborers can become entitled to share in profits. Such co-operation is now feasible in a few employments and may become adapted to others. It will always be difficult to introduce co-operation into lines in which the risks are great, the markets distant and the returns slow to come in. Further, co-operative associations are in view of law individuals, and they can not evade competition with individuals or other associations. Co-operation may mitigate, regulate, and in some cases annul competition, but can not possibly replace it.

Another, and in my judgment more promising means to increase wages at the expense of excessive profit, is by obtaining knowledge of business affairs on the part of employes. In the modern world of schools, the newspaper, and statistics, it should soon become impossible for employers to keep the community in the dark as to the cost, the risks and the profit of business. All corporations enjoying franchises ought to be obliged, by effective laws, to make known to the public the complete details of their operations. Employers generally will at length find it to their advantage to take their employes into their confidence, and convince them that wages cannot be increased without peril to the business. When employers are as ready to prove as they are to assert that they are paying as much wages as the business will stand, employes will be likely to believe them; but so long as the books are shut, mere words will not convince. To collect and diffuse such information for the benefit of the people of your respective states is, I suppose, the actual if not always the avowed object of the creation of Bureaus of Labor Statistics. The whole people are entitled

to know, and they mean to know, all the secrets which from time immemorial have been a part of the "art and mystery" of trade and manufacture. Such a state of things calls for a high degree of intelligence, moderation and self-control on the part of labor. It will be useless to open the ledgers to the workmen's committees till the committeemen at least understand double-entry book-keeping. With larger knowledge of markets, of ways and means of production, and of accounting, the risks of business may be greatly diminished, and both capital and labor may work together zealously to increase the fund from which wages and profits may alike be increased. It is not a vain dream, that some day all industry directed by the highest knowledge and strictest honor may, without charters and constitutions to restrict free movement or free sales, combine the vigor flowing from competition with the stability and order to come from true co-operation.

CO-OPERATION.

J. M. Bloomer, State Master Workman of the Knights of Labor, and editor of the Industrial News of Toledo, Ohio, was selected to make the co-operation argument. Those who know Mr. Bloomer, who have read his essays and who have heard him speak on this subject, will concede that no abler person could have been selected. He says:

But little information can be given on a subject which traverses the whole field of political economy, in the brief space which can be devoted to it in such a report as this. But, as co-operation is now generally recognized by the more intelligent and practical workers in the labor movement as the chief, if not the only means of their permanent elevation, a brief review of its progress and aims may be useful and interesting.

Co-operation commenced over fifty years ago in the United States, but until quite recently it made no real progress. From 1845 to 1860 considerable progress was made by co-operators in the New England and Eastern States, with a few attempts in the Middle and Western States. The breaking out of the civil war, however, so completely disrupted the enterprises, that in 1861 they were nearly all closed up or sold out to the store-keepers. What would have been the result, had these early co-operators been permitted to build up and perfect the work begun, no one can tell, but we have good reason to assume that our industrial wage system would not have been what it is to-day.

The next attempt at co-operation was by the Patrons of Husbandry and the Grangers. They started numerous stores, secured a great saving, and in some instances were commencing to realize the hopes and anticipations of the promoters of the enterprises; but about the time that success should have commenced to smile upon it the institution began to fall into decay and crumble, until only a few isolated stores remained as relics of what once promised industrial progress and happiness to the toilers.

We are now entering upon the third era of co-operation, and we see enterprises springing up in every direction, under the banner of co-operation. The co-operation of to-day draws its inspiration from the Rochdale system in England, and it owes its impetus to the educational work of the Knights of Labor and the Grange, the Farmers' Alliance, and the Agricultural Wheel.

Statistics on co-operation are very meagre, and to even approximate its present extent and progress in the United States is impossible. The chief trouble on this score arises from the fact that we have as yet no established standard as to

what is and what is not real co-operation. To classify every enterprise as co-operation, which sails under that flag, would make an excellent exhibit so far as the volume of business done is concerned, but a very meagre showing as to the expected results of co-operation.

From the most reliable data at hand we might estimate the co-operative stores of New England and the Eastern States at 200, and the Middle, Western, and Southern States at 300, with an aggregate capital of \$5,000,000. In addition to these are several productive enterprises, with a capital approximating \$3,000,000. The most notable of these last are the coopers of Minneapolis, with a capital of \$300,000. This concern is a K. of L. enterprise, has been in operation about six years, and controls the entire cooperage business of the "Flour City." It has made the coopers engaged in it independent, and, what is a remarkable feature, is the fact that in the handling of over \$5,000,000 not a single breach of trust or defalcation has taken place. The Knights of Minneapolis have also established three prosperous family supply stores, and built an elegant hall containing five store-rooms and numerous assembly and committee rooms, as well as an immense auditorium, at an outlay of about \$70,000.

One of the most extensive co-operative stores in the East is located in Philadelphia, and it had a trade in 1886 amounting to \$168,000. Very prosperous enterprises also exist in Worcester, Mass., and in Trenton and New Brunswick, New Jersey. The full statistics of ten fairly managed co-operative stores located in four States show purchases to the amount of \$347,472, and sales of \$420,494. This exhibits a gross gain of \$73,022, or 21 per cent. upon the cost price of the goods. The entire expense of conducting the business, which included wages, rent, teams, freight, depreciation of stock, insurance, ice, water, taxes, stationery, and all other incidentals, was \$44,260, or 12½ per cent., leaving a net profit of \$19,642, or 8½ per cent. upon the purchase price. The total capital paid in was \$66,242, so that we have here a net profit of \$19,642, or 29½ per cent. upon the capital employed. How does this compare with receiving four per cent. from a savings bank? The risk in the business was really nothing, as the co-operators had it within their own power to make the stores successful by merely patronizing them.

It should be borne in mind that these stores were largely experimental, conducted to a great extent by men who had comparatively little or no business experience; they therefore cannot show the full economy of co-operation. The remarkable profit shown above over the profit usually made by individual store-keepers, is an evidence of the economy of co-operation. Prof. Hadley found by investigation that the stores in Connecticut that gave credit, charged on an average six per cent. more for the same goods than cash stores. Again, there is no commercial competition between co-operative stores; their customers have a direct pecuniary interest in their success, and will patronize them on side streets without expensive advertising, herein making a great saving.

The successful co-operation of to-day being based upon the Rochdale system, it may be interesting as well as useful to take a glance at the rise and progress of that system and its modes of operation and final objects and aims. The Rochdale Society began by opening a store with twenty-eight members and \$146 capital, and made no profit the first year. The next year it had seventy-four members, \$905 capital stock, \$3,550 business, and made \$110 net profit. In 1876 it had 8,892 members, a capital of \$1,270,000, a business of \$1,525,000, and over \$252,000 profits. The Leeds Society has now 23,000 members, and makes an annual profit of \$295,000. There are two societies at Oldham, which, with less than 23,000 members, made last year \$450,000 profits. In 1861 there were in Great Britain—England, Ireland, Scotland and Wales—48,184 members of co-operative societies, with

a share and loan capital of \$1,698,450, having a trade amounting to \$7,560,585. In 1886 there was a membership of nearly 1,000,000, with a share and loan capital of \$60,000,000; the sales for 1886 amounted to \$165,000,000, with a profit of \$15,000,000.

The members of the Rochdale plan of co-operation in Great Britain now exceed 900,000; they have 1,200 stores in operation; have a share capital of \$40,000,000; do a business of \$150,000,000 a year, and divide among themselves \$12,000,000, making a net profit of 30 per cent. upon their capital. They also do an annual business of \$80,000,000 through their co-operative bank at Manchester; expend \$110,000 annually for co-operative educational work through the central society over and above the vast sums expended in this way by the branches. From 1861 to 1886 they have divided \$150,000,000 profits among their members.

The success of the Rochdale plan of co-operation is due largely, if not entirely, to their disposition of profits. They pay no dividends upon capital stock. The capital stock draws a fixed rate per cent. interest, which is generally 5 per cent., and all net profits beyond this go to those who contributed—to those who patronized the enterprises, in proportion to the amount of their purchases. By this means thousands of poor men and women who could not afford to take even one share of stock, were enabled to become shareholders by leaving the dividends on their purchases in the hands of the society until enough had accumulated to purchase a share of stock. In this way these societies have enabled thousands of poor persons to accumulate comfortable homes by giving them the net profits upon their food and clothing, which go to the individual dealer under the competitive plan. The Rochdale Society having accumulated a vast surplus beyond what is necessary for stores, and their members having secured their own homes, they are now turning their attention to production. The members will use their surplus dividends upon purchases to procure for themselves the tools of production by establishing co-operative factories in which the workers will receive the full products of their labor.

It is a matter of congratulation that American workingmen are turning their faces in the direction of co-operation and abandoning the strike as a remedy for industrial evils. They are now commencing to realize that the power of the employer over labor is in his capital. The toilers possess one of the agencies of production—labor; the employer possesses the other—capital, the opportunity and tools, without which labor cannot produce to any advantage. The necessities of nature always prompt, yes, compel the laborer to employ his agency of production upon some terms, while the employer is induced to use his agency, capital, for the purpose of adding to his wealth. The motive which impels labor to go to work is irresistible; therefore wage labor is ever the servant of capital. The establishment of a co-operative industrial system under which all who work will receive the full fruits of their toil, is certainly the scientific solution of the question of labor-saving machinery. When all can start by saving the profits upon what they eat, drink and wear, which now go to middlemen, and are largely wasted in an expensive, inconvenient, monopolistic, wasteful and ruinous competitive system, why should not all be co-operators?

But it is well for all to understand what real co-operation is. I refer to this point because, among very intelligent persons, the vaguest idea exists as to what co-operation is, and what co-operators intend to do. The common opinion seems to be that co-operation is simply a scheme for supplanting the ordinary stores by stores owned by a number of persons who are themselves the chief customers. Some imagine that it is buying at first cost or wholesale, and distributing goods among the members at cost. The term co-operation is also applied by some per-

sons to the operations of mere joint stock companies, in which workingmen own a portion of the stock, and is generally understood in that case to mean the proposed substitution of such companies for individual employers in the production of wealth.

But genuine co-operation comprehends much more than is expressed in any of these opinions, or even all of them taken together. It aims not at substituting joint stock companies stores for the stores of individuals, but the object is to make all producers and consumers their own store-keepers; it aims not at substituting joint stock companies for individual employers, but it would make all men who work their own employers; it aims not at merely accumulating wealth for the co-operators by their employing outside labor, but its object is to give all who contribute to the production of wealth the full fruits of their toil; it aims, in fine, to do away with the exploitation of labor by capital for profit; it aims at the total abolition of the gambler, the speculator, the "bull" and the "bear," the stock waterer, the bucket-shop, the broker, the capitalistic middleman, and the bondholding money-lending usurer; and it seeks to accomplish all this without asking pecuniary aid from philanthropists or from the government. But did co-operation comprehend nothing more than enabling each competitor to secure his full share in the mad race for wealth, it would certainly end in dismal failure. It certainly contemplates something higher, nobler and grander than a life-long struggle for the material things of time and the gross and sensual gratifications which they promise to the human body.

Co-operation is an advance step in human progress. It is the ladder upon which the world's toilers are to make the transit from a lower and imperfect to a higher and more perfect social and industrial system, which will call into exercise and gratify a higher and nobler order of human feelings and capacities, or diffuse more widely among the community the standard of elevation achieved. The first essential condition of this progress is sound morality, guided by pure and unselfish motives and lofty intelligence. Without sound social morality and business integrity, there can be no lasting progress, no high civilization. The wheels of all sound and lasting progress must run in the celestial grooves; word must conform to deed and deed to word; private well-being must be subservient to public well-being; personal inclinations, desires, partialities, jealousies, enmities and interests must be restrained for the general good; each should learn to carry out to the highest perfection his part, and never disappoint reasonable expectations. Such and such like are the dispositions by which we rise in morality of permanent progress—that is to say, the passage from one state of social existence to another.

Real co-operation, the only plan of co-operation which can permanently benefit the whole people, is in its infancy in the United States. It occupies a narrow strip of ground between the monopoly of dividend craving joint-stockism on one side and State socialism and communism on the other. Co-operation differs from joint-stockism fundamentally by paying a reasonable fixed interest upon the capital actually invested, limiting all members to one vote and a fixed amount of stock, and giving all dividends over and above interest on capital and expenses of conducting the business to customers and employes, the latter all to be members. This removes all incentive to monopolize or water stock, and offers a powerful inducement to every one to become a member. It differs from State socialism in limiting the functions of government to matters affecting the interests of the general public, and leaving production and distribution entirely in the hands of the people in order that each may produce and enjoy to the full measure of his capacity without restraint. It differs from communism in enabling each producer to own, control, and enjoy the fruits of his own labor instead of turning it into a

common fund in which all are to share and share alike. Yet, while this ground of genuine co-operation is narrow now, it is ever widening, and the lines of demarcation, which separate it from the corporate monopolist on one side and the socialist and communist who base their individuality in the general man on the other side, are ever growing more clearly defined.

This is the system of co-operation contemplated by the founders of the Knights of Labor. To promulgate these ideas ; to guide and direct the toiling masses in the road to permanent industrial liberation ; to secure equal opportunities to all who obey the divine injunction, "in the sweat of thy face shalt thou eat bread ;" to enable all to produce and enjoy according to their capacity, without interfering with the rights of others, is the work and mission of the Knighthood. And to these objects and aims may properly be traced the opposition which Knighthood meets at the hands alike of monopolist, socialist, communist and anarchist. Well has the poet said :

"Grim wolves are at the fold ;
'Twas the prophecy of old.
But their teeth have lost their hold ;
They lie in lair and prowl ;
At each other snap and growl ;
But go for truth with concert howl."

Toledo, O., December 24, 1887.

PART III.

STRIKES, LOCK-OUTS AND BOYCOTTS.

It has been well said that strikes are a relic of barbarism, but they seem always to have been with us and in all probability will remain until the end. They will remain at least until all employers of labor and all the workingmen can, in letter and in spirit, obey the divine injunction, "whatsoever ye would that men should do unto you, do you even so unto them." A history of the industrial growth of this country would be a history of the struggle for orders carried on in the same spirit that principalities and nations have struggled for power. It has been a struggle in which the survival of the fittest have usurped the business, just as those rulers backed by the best soldiers have extended their power. The concern with the most money and the best inventions, backed by the spirit that is abroad in the land that "Might Makes Right," struck down its less fortunate competitors and controlled the industry just as Cæsar and Alexander cut their way through the armies of the world to unlimited political powers. Strikes are to the industrial world what wars are to the political world. So when the Nations are seeking to supplant the soldier with the arbitrator, it is in order for the industrial world to settle its disagreements in the same way. While there is no probability or possibility of doing away entirely with strikes and lock-outs, there is a growing feeling among employers and employes and among the people in general in favor of arbitrating the difficulties that may arise in the industrial world.

Compared with former years, there have been but few strikes this year. While there has been no thorough investigation of this subject, I have made an effort to keep a run of the strikes and lock-outs as they have occurred. In this connection it is a pleasure to embody the following letter received from Grand Chief Engineer P. M. Arthur, of the Brotherhood of Locomotive Engineers :

CLEVELAND, OHIO, *September 29, 1887.*

A. D. Fassett, Esq.:

DEAR SIR: I am in receipt of yours of the 28th, and in reply would say that the Brotherhood of Locomotive Engineers have never had a strike in the State of Ohio, and I could not give you the desired information as to other Labor Associations, as I have no means at my command to do so.

Respectfully yours,

P. M. ARTHUR, *G. C. E.*

The following letter was received from the Secretary of the Bricklayers' and Masons' International Union:

CINCINNATI, OHIO, *October 1, 1887.*

A. D. Fassett, Esq., Columbus, Ohio.:

DEAR SIR: Yours received, and in answer will say that so far as strikes are concerned of our craft in Ohio, we have had no general or recognized strike of any of our Subordinate Unions; in fact, the bricklayers of Ohio have had very few differences with the contractors. At the last convention held in Washington, January, 1887, the following resolution was passed, and became a law requiring all Subordinate Unions to adopt the same:

"Believing that many grievances that now find their way into the Subordinate Unions of the Bricklayers' and Masons' International Union, could be settled by joint arbitration between the bosses and their employes, to the benefit of both, be it, therefore,

"*Resolved*, That all Subordinate Unions adopt such laws as will provide for such Boards of Arbitration."

I am pleased to say, that by carrying out above law, strikes have been prevented (to my certain knowledge) in several cities, I will further state that we (The I. U.), have eight Subordinate Unions in Ohio, two of them having been organized this year. All are in a prosperous condition. If at any time I can furnish any information, I will cheerfully do so.

I am yours,

W. H. STEVENSON, *Sec'y B. & M. I. U.*

Probably one of the most powerful labor organizations in the world is the Amalgamated Association of Iron and Steel Workers, which for years has had its headquarters in Pittsburgh, Pennsylvania. This Association includes all the skilled workingmen connected with the rolling mills. It was organized in August, 1876, by a joint meeting of the Sons of Vulcan, Heaters and other Organizations of Iron and Steel Workers then in existence. It has always been intelligently directed, well officered, and the result of its works has afforded one of the best illustrations that can be had of the benefits to labor of a strong organization. The following letter from Vice President Dennis O'Leary, of the Second District, and Vice President John Miskel, of the Sixth District, furnish a history of the rolling mill strikes in Ohio for the past year:

WHEELING, *October 2, 1887.**Hon. A. D. Fassett, Columbus, Ohio.:*

SIR: Yours of the 28th ult. to hand and contents noted. In reply will say that the men working in the rolling mill of W. D. Wood, at Wellsville, organized a Lodge of the A. A., on February 11, 1887, and for so doing were locked out the next morning and are still out up to this writing. The mill has been partly operated by others since March 1st. It has not been running at its full capacity since that time. The prospects are very discouraging for the Union men getting back to work in the mill, as W. D. Wood said he had forty thousand dollars to keep Union men out of his mills. The next strike was at the works of the Laughlin & Junction Steel Company, at Mingo Junction, Ohio, over an obnoxious rule posted in the mill, which the workmen, who were all members of the Amalgamated Association of Iron and Steel Workers, notified the management that they would not work under those rules, for which all the workmen on that turn in mill were discharged, or one-half the employes of the whole plant, the men working on that turn being the first to have the grievance complained of. After several conferences with the management to try to effect a settlement, the men failed, and the result was a strike on the 11th of February, 1887, and continued until the 26th of the same month, when the firm conceded all the employes asked for, and reinstated the discharged men and thereby ended the strike in favor of the workmen.

The next strike in the district was also at Mingo, by the employes of the Junction Iron and Nail Company. The strike started on July 1st, and is still on. The strikers were the heaters, rollers and nailers in the employ of said company. The reduction offered in some cases was 50 per cent. The prospects are that the men will win the strike, the works being still idle. The only other strike in the district occurred at the Spaulding Iron Works at Brilliant, Jefferson county, Ohio. The strike has been on since the 26th of August, and is still on. The strikers are heaters, and their helpers, rollers and roll-hands, and in the heaters' case it is a strike against a fifty per cent. reduction, and in the others case it is a reduction of ten per cent.

Hoping this will give you the information desired, I remain,

Yours fraternally,

DENNIS O'LEARY.

YOUNGSTOWN, OHIO, *October 10, 1887.**Hon. A. D. Fassett, Columbus, Ohio.:*

DEAR SIR: Yours of September 27th, in regard to the number of strikes we have had in the Sixth District, beginning on the 15th of November, 1886, at hand. The only trouble we have had in this the Sixth District that caused the stopping of any of our mills for the last two years, was the law enacted by our last convention. The law was that no man should hold more than one job. It reads as follows:

"This Association will not tolerate any man holding more than one job, one furnace single turn, one train of rolls double turn, one steel smelting gas furnace both turns, or two steel smelting gas furnaces single turn, to constitute one job, and all are expected to enforce this rule. Any man holding two or more separate jobs in violation of this section, shall be stigmatized as a black sheep."

We had in the Sixth District, eleven mills that were effected by the above section. Seven of the eleven mills that were effected abolished the two-job system without stopping their mills. The other four companies stopped their mills on the first day of August, that being the time that the new section went into effect. Two of the four mills were idle two weeks, one three, and the other five weeks. At the end of the fifth week all the mills in this district were running, and no man held two

jobs, which I think was one of the grandest things ever accomplished by the A. A. of I. and S. W. It now gives the money to the man who works for it, and allows no man to pick up money that rightfully belongs to another.

Yours truly,

JOHN MISKEL.

Ed. F. O'Shea, editor of the Brakeman's Journal, says of the Brakeman's Brotherhood: "There were no strikes in the State of Ohio in the past year which were countenanced and promulgated under the name of our Brotherhood."

William A. Simsrott, general secretary and treasurer of the Switchman's Mutual Aid Association, writes: We have had no strike in Ohio since the existence of this organization, March 2d, 1885."

The same information was asked for from the officers of other labor organizations having a foothold in Ohio, but no other replies were received.

OTHER STRIKES.

Four hundred coal miners of Walters & Ferris, Washingtonville, Mahoning county, struck January 13th, 1887, for an advance of ten per cent., which was conceded. At the mines of the Witch Hazel Company, and the Poland Coal Company, Youngstown, Ohio, about half of the miners in each struck January 3d, and refused to work because the Board of Arbitration did not advance the wages of drivers and roadmen. The agreement to arbitrate stated that the award was to be binding on both miners and operators, and Thomas Williams was selected by the miners as their arbitrator. He represented them on the Board, and notified the miners that they were acting in bad faith, and unless they returned to work the operators would be justified in putting other men in their places. The strikers returned to work.

The stone-cutters on the new court house at Lexington, Perry county, struck April 25th, for forty cents an hour instead of thirty-five. The strike was successful.

A successful strike of blacksmiths' helpers began at Dayton, April 16th, for ten per cent. advance.

Seventy employes of the bolt and steel works at Canton, they being roughers and furnace men, struck April 6th, for an increase of wages from \$1.30 to \$1.50.

The ore handlers at Ashtabula made a successful strike for two cents a ton in May.

The 200 employes of the Brier Hill furnaces, at Youngstown, struck May 10th, for two weeks pay. Demand acceded to after a week's idleness.

The feeders at the Jefferson Iron Works, Steubenville, struck February 2d, to compel the nailers to advance their wages to their understanding of the scale.

The boycott placed on the Union Shoe Company, of Chillicothe, failed, the merchants refusing to quit selling the goods made by this company.

The self-feeding boys at the Beilaire Nail Factory struck February 8th, for an advance from three to five cents per keg. Partially successful.

The under drivers at the Shawnee Valley mines, struck February 9th, against the promotion of a digger to be boss driver. The strike lasted six days, the company yielding.

Stone-cutters at Youngstown struck April 20th, against a non-union foreman.

February 27th, the men in the moulding department of Elbert & Co.'s Malleable Iron Works at Canton, struck for pay-day on Saturday of each week. Request granted.

A strike was inaugurated in the Corning Valley March 12th, against what the miners regarded unjust docking. It was amicably arbitrated.

A strike at the Bastard mines, near Steubenville, for 75 cents a ton was lost by the arbitrators' decision.

There was an unsuccessful strike of yard crews for a third brakeman, on the Mahoning division of the N. Y. P. & O. road, in March.

A. A. Carlton of the National Board of the Knights of Labor, visited Akron in January to investigate the boycott which was on March 11, 1886, put on the Empire Mower and Reaper Works, Akron Straw Board Works, The Sieberling Flouring Mill, and The Doylestown Mower and Reaper Works. This was known as the Sieberling boycott, and Mr. Carlton had a conference with John F. Sieberling, who is the principal owner of all these works. The announcement was made soon after that Sieberling had agreed to employ men without regard to organization, and that the boycott was lifted. This, however, was officially denied in the following letter from a member of the District Executive Board:

AKRON, OHIO, *September 28, 1887.*

A. D. Fassett, Esq.:

Your favor of the 26th is at hand and contents noted. In reply will say that A. A. Carlton, a member of the G. E. Board, was here, but did not make a settlement. He met with Mr. Sieberling, and he agreed to sign papers to the effect that he would give all his old employes employment, if the K. of L. would in return raise the boycott. But when the District Executive Board waited on him with said papers, he refused to sign them, so that left all his shops and factories remain just as they were, under a boycott.

Respectfully yours,

E. B. LONSBURY.

A boycott was issued at Portsmouth, Ohio, on the Portsmouth Wagon Stock Company, The Burgess Steel and Iron Works, The Union Flour Mills, George W. Davis & Co.'s Distillery, The Farmers' National Bank, and the Portsmouth Times. The cause of this was the reduction of wages by the Wagon Stock Company, and on the employes' refusal to accept it, the employment of non-union men in their places. The establishments boycotted are supposed to be owned in whole or part, by the directors of the Wagon Stock Company. The boycott was subsequently restricted to the one company.

Probably the most noted strike of the year was that of the Stove Moulders which organized in St. Louis in March. On the 8th of March the moulders at St. Louis made a demand for 15 per cent. increase of wages. This was refused, with the promise that after June 1st they should have a ten per cent. advance. The men refused the proposed compromise, but offered to accept ten per cent. at once. The firm of Bridge, Beech & Co., who took the lead in this matter, offered five cents advance at once, and promised five additional June 1st, providing prices for their product could be advanced. The moulders, tiring of this quibbling decided to quit work. The National Defense Association, which is a union of manufacturers, took the matter in hand, and attempted to coerce the St. Louis men by sending the patterns of Bridge, Beech & Co., to every shop in the country to have castings made. The stove moulders are a very strong body, perfectly organized, and possessing a large treasury fund. Wherever the patterns were sent the moulders refused to work. The result was a stubborn conflict, which lasted for several months, but which finally terminated in a victory for the moulders.

A strike began on April 18th, in the American Tube and Iron Works at Youngstown, which affected 350 men. The trouble was, the company refused to meet in conference any Committee of the Knights of Labor, regarding grievances in the mill. The Knights of Labor and other labor organizations of Youngstown sympathized with the strikers, and a boycott was laid upon the works, which ran along with non-union men secured soon after the strike was inaugurated. This strike attracted a great deal of attention, as several law suits grew out of it. There were assault and battery, conspiracy and injunction cases. The community became very much excited, and much bad blood resulted. The trouble was adjusted in November, by arbitration brought about by the action of the trade's council, a strong conservative body of workingmen at Youngstown.

LABOR TROUBLES IN CINCINNATI.

Special Agent Connolly furnishes the following regarding labor troubles in Cincinnati:

Early in June the employes of the Hall Safe and Lock Co. became dissatisfied with the pay they were receiving, and the whole force of 800 men struck work and remained out for six weeks, lacking one day. A conference was then held, which resulted in a compromise, the employes receiving an advance over what they received when they struck.

During the same month 60 boys, who were employed in the factory of the P. J. Sorg Co., tobacco manufacturers, struck for an increase of pay, but returned the following day at former prices.

The employes of the Oxley Stave Co., to the number of 110 men, became dissatisfied with the pay they were receiving, in May, and struck for an increase, which was refused by the company. The employes left the establishment and remained away. The result of the strike was adverse to the men, as the company filled many of their places by the employment of men who sought them. The force has been somewhat reduced since the trouble occurred.

In April the hod-carriers of Cincinnati, numbering 400, struck for an advance in wages, and after being out three weeks the employers acceded to their demands.

In May last the workmen in the establishment of the Powell Brass Company asked that they be granted a Saturday half-holiday. The company refused to grant the request, and the men struck, but they remained out one day only, when the company settled the trouble by conceding all the men struck for.

In the early part of June the employes of the Ireland Manufacturing Co., to the number of 30, became dissatisfied with the pay they were receiving, and made a demand for an increase, which was at first refused, but after the employes had been out of the establishment for one week the company granted the increase, and the men returned to work. At the conference between the employers and employes, which adjusted the difficulty, no ill-feeling on either side was manifest.

In December, 700 coopers went on a strike for an advance in wages, and remained out 5 weeks, at the end of which a settlement was effected, which granted the demand in all hand-shops, but in the machine-shop (the only one in this country) the matter was compromised.

In January the Architectural Iron Workers, to the number of 125, made a demand upon the employers for a reduction in the hours of labor. The employers refused to comply, and the employes left their situations. They remained out about 6 weeks and then returned to work under the old rules.

In the month of November 65 employes of the Hiram W. Davis Carriage Works went on strike because the firm would not recognize a committee, appointed in a regular manner, by the organization to which the men belonged. After the works had been closed for two weeks the firm receded and the men returned to work.

In April last the firm of Kripendorf & Hart, shoe manufacturers, discharged four girls who were employed in the stamping department. The members of the Assembly to which they belonged, to the number of 300 girls, employed in this factory, struck work and remained out two days, when the discharged girls were reinstated by the firm and the strike ended.

In May last 1,000 carpenters struck for a decrease in the hours of labor from ten to nine hours per day. The bosses who employed men on "outside" work

immediately acceded to the demand of the workmen, but the mill-owners refused, the result of which was a six weeks' strike. The outside men, sympathizing with the mill-men, remained out for the length of time mentioned above in an effort to force the mill-owners to terms. At the end of six weeks all returned to work, the "outside" men at a reduction of hours, while the mill hands returned without a reduction of hours.

LABOR TROUBLES IN CLEVELAND.

Special Agent Meals furnishes the following regarding Cleveland strikes and lock-outs:

The men employed at the American Wire Mill have had their wages reduced 40 per cent. during the last four years. In 1886 they had a raise of ten per cent., leaving them 30 per cent. below the prices paid at Newburg. The last Tuesday in February, 1887, they asked for an advance of 15 per cent. for the clearing house laborers, and ten per cent. for the skilled men. This was refused. The men claimed that common laborers were paid from \$1.37 to \$1.47 a day. The wire drawers proper earned from \$1.75 to \$2.50 a day. During the last four years the machinery has been run at increased speed, and the weight of the coils increased from 50 to 140 pounds. To earn from \$1.75 to \$2.50 a day, a man must work from 5,000 to 7,000 pounds of iron, and this must be handled four times; it makes a lift of from 20,000 to 28,000 pounds, or from 10 to 14 tons a day. The company secured new men, and the old hands are at work elsewhere.

On December 24th, 1887, the White Sewing Machine Company discharged or locked-out about 175 hands, the majority being men with families, who had been in the company's employ from five to seventeen years. They retained 86 single men, and 45 boys. Most of these had been in the factory only a short time.

On August 6th the Bakers' Union called out its men from the Ohio Baking Company on account of a disagreement about the price of a new kind of bread. The men were successful.

On September 3rd, the men employed by the Standard Sewing Machine Company were called out by the District Executive Board of District Assembly 47, K. of L., to protest against the introduction of contract labor. During the first week in November the company agreed to the terms proposed by the district, and the men returned to work.

On March 5th the N. Y. P. & O. brakemen struck. The cause was an order reducing all the yard crews at Youngstown to two men instead of three, the order to take effect March 1st, 1887. The men worked one day, and on the second insisted that the man be restored. The company refused and the men quit work. The second week of the strike the company issued injunctions against sixteen of the men to keep off the premises. The third week the company succeeded in running two or three trains a day by putting conductors at braking. An iron-clad oath contract for the men to sign was issued. Men were found to take it and the strike was lost.

The plumbers struck for eight hours a day with ten hours pay. They offered to settle the difference by arbitration, but this the employers refused. The men were defeated after a protracted struggle.

Monday, April 27th, the moulders of the Co-operative Stove Works, and the Cleveland Stove Company, were given the alternative of working on struck patterns of Bridge, Beach & Company or go out. 125 moulders and 300 laborers quit work. The lock-out failed.

May 28th, the ore handlers on the N. Y. P. & O. docks struck for an increase

of pay to \$2.65 a day. The second week in June the company imported colored laborers to take the place of the strikers. One of these threw a piece of ore at John Maniens, a vessel man, who was returning to his vessel with a pail of water and broke his leg. A riot followed, during which the negroes were driven from the docks, to which they refused to return. Barry and Maguire, of the General Executive Board K. of L., came on from Philadelphia to effect a settlement and failed. The company at last gave the men the \$2.00 a day.

The following TABLES OF STRIKES AND LOCKOUTS, occurring in Ohio during the six years, from 1881 to 1886, inclusive, contain much valuable information. All who are in any way interested in the labor question can find by a study of these tables information both interesting and instructive.

For this table we are indebted to Hon. Carroll D. Wright, Chief of the National Bureau.

STRIKES, BY YEARS AND INDUSTRIES.

[From advance sheets of 3d Annual Report U. S. Bureau of Labor].

Industries and years.	Locality.	Cause or object.	Ordered by labor organization.	Establishments.		Beginning.	End.	Duration (days).	Succeeded.	Employees'—		Employers' loss.
				Number.	Days closed.					Loss.	Assistance.	
1881.							1881.					
<i>Agricultural Implements.</i>												
Woodwork's and help's	Dayton ..	For increase of wages.....	No...	1	.....	May 10 ..	May 11....	1	No.....	\$30	.....	.....
<i>Boots and Shoes.</i>												
Bottomers.....	Cincinnati.....	For piece work instead of day work....	No...	1	36	June 1....	July 7	36	Yes....	2,631	\$1,000	\$15,000
Pullers-over.....	Cincinnati.....	For increase of wages.....	No...	1	.....	July 13 ...	July 16 ...	3	Yes....	129	.....	.....
<i>Brewing.</i>												
Brewers ..	Cincinnati ..	For reduction of hours.....	Yes..	4	7	July 15 ...	July 22 ...	7	No.....	2,280	.....	12,000
Brewers ..	Cincinnati ..	For reduction of hours ..	Yes..	2	4	July 15 ...	July 19 ...	4	No.....	480	.....	.....
Brewers ..	Cincinnati ..	For reduction of hours ..	Yes..	2	.....	July 15 ...	Oct. 15....	92	No.....	16,985	.....	50,000
Brewers ..	Cincinnati ..	For reduction of hours ..	Yes..	2	2	July 15 ...	July 17 ...	2	No.....	148	.....	3,000
Brewers ..	Cincinnati ..	For reduction of hours ..	Yes..	1	.....	July 15 ...	July 22 ...	7	No.....	1,032	.....	9,000
Brewers ..	Cincinnati ..	For reduction of hours ..	Yes..	1	.....	July 15 ...	July 16 ...	1	No.....	22	.....	.....
Brewers ..	Cincinnati ..	For reduction of hours ..	Yes..	1	.....	July 15 ...	July 18 ...	3	No.....	138	.....	7,000
<i>Brick.</i>												
Employees ..	Cincinnati ..	For increase of wages ..	Yes..	32	5	August 10	Aug. 15...	5	Yes....	2,438	.....	772
<i>Building Trades.</i>												
Carpenters ..	Cincinnati ..	For increase of wages ..	No...	2	14	April 1...	April 15 ..	14	Yes....	1,512	.....	400
Carpenters ..	Cincinnati ..	For increase of wages ..	No...	1	21	April 1...	April 22..	21	Partly	2,970	.....	1,000
Carpenters ..	Cincinnati ..	For increase of wages ..	No...	1	7	April 1...	April 8...	7	Partly	338	.....	.....
Carpenters ..	Cincinnati ..	For increase of wages ..	No...	1	44	April 1...	May 15....	44	Partly	6,383	.....	1,500
Carpenters ..	Cincinnati ..	For increase of wages ..	No...	1	27	April 4...	May 1.....	27	Partly	2,415	.....	1,000
Roofers, tin ..	Cincinnati ..	For increase of wages ..	Yes..	12	16	May 30 ...	June 15 ...	16	Yes... ..	5,887	617	11,155
<i>Carriages and Wagons.</i>												
Painters ..	Cincinnati ..	For reinstatement of discharged foreman.....	No...	1	.....	June 30...	July 4	4	No.....	724	.....	.....
<i>Clothing.</i>												
Tailors ..	Cincinnati ..	For increase of wages.....	Yes..	1	.....	March 21..	April 19..	29	Partly	1,000	.....	100

STRIKES, BY YEARS AND INDUSTRIES—Continued.

Industries and years.	Locality.	Cause or object.	Ordered by labor organization.	Establishments.		Beginning.	End.	Duration (days).	Succeeded.	Employees'—		Employers' loss.
				Num ber.	Days closed.					Loss.	Assistance.	
1881.							1881.					
<i>Cooperage.</i>												
Employees	Cincinnati	For increase of wages.....	No...	6	9	Sept. 5....	Sept. 14...	9	No.....	\$2,046	.....	\$2,414
Employees	Cincinnati	For increase of wages	No...	1	7	Sept. 5....	Sept. 12...	7	No.....	156	.....	200
Employees	Cincinnati	For increase of wages.....	No...	1	5	Sept. 5....	Sept. 10...	5	No.....	142	.....	100
Employees	Cincinnati	For increase of wages.....	No...	1	3	Sept. 5....	Sept. 8....	3	No.....	35	.....	50
<i>Cotton Goods.</i>												
Spoolers and twisters	Cincinnati	For reduction of hours.....	No...	1	1	May 10 ...	May 11....	1	Yes.....	129	.....	.....
Weavers	Cincinnati	For increase of wages	No...	1	12	Oct. 4....	Oct. 16....	12	No.....	1,300	.....	300
<i>Food Preparations.</i>												
Stick-candy makers	Cincinnati	For increa. and uniform rate of wages..	Yes..	9	.....	Sept. 5....	Oct. 8.....	33	Yes.....	2,820	\$625	825
<i>Machines and Machinery.</i>												
Moulders, machine shop	Cincinnati	For increase of wages	Yes..	1	28	Mar. 7	April 20..	44	Yes.....	7,210	.....	1,000
Moulders and boiler-makers, machine shop	Zanesville.....	For increase of wages.....	No...	1	.....	Aug. 29 ...	Sept. 10...	12	Partly	1,282	.....	.....
<i>Metals and Metallic Goods.</i>												
Moulders, stove foundry	Martin's Ferry	For increase of wages.....	No...	1	7	Feb. — ...	Feb. —.....	7	Yes.....	223	.....	.....
Moulders, stove foundry	Cincinnati	For increase of wages.....	Yes..	5	3	Feb. 7	Feb. 10....	3	Yes.....	3,336	.....	500
Moulders, hardw'c fact'y	Cleveland	For increase of wages.....	Yes..	1	.....	Mar. 30 ...	May 13....	44	Yes.....	5,198	.....	.....
Moulders, iron foundry..	Cleveland	For increase of wages.....	Yes..	1	7	Mar. 30 ...	May 13....	44	Partly	16,201	.....	3,000
Moulders, iron foundry..	Cleveland	For increase of wages.....	Yes..	5	43	Mar. 31 ...	May 13....	43	Partly	30,333	a 2,000	17,597
Moulders, iron foundry..	Cleveland	For increase of wages.....	Yes..	3	.....	Mar. 31 ..	May 13....	43	Partly	3,417	a	825
Moulders, iron foundry..	Cleveland	For increase of wages.....	Yes..	1	2	Mar. 31 ...	April 2....	2	Partly	96	.....	50
Moulders, iron foundry..	Cleveland	For increase of wages.....	Yes..	1	.....	Mar. 31 ...	May 9....	39	Partly	2,376	a	1,204
Moulders, stove foundry	Portsmouth	For increase of wages.....	No...	2	.....	April — ...	May —.....	35	No.....	1,877	.....	.....
Moulders, iron works.....	Cleveland	In sympathy with strike elsewhere....	Yes..	1	.....	April 4....	May 13....	39	Yes.....	8,330	.....	10,000
Employees, stove foundry	Columbus	Against reduction of wages and employment of apprentices	Yes..	1	14	April 21 ..	Aug. 1....	102	No.....	1,688	.....	.....
Nail plate tenders, nail works	Martin's Ferry	For increase of wages.....	No...	1	3	May 21....	May 24....	3	Partly	1,998	.....	1,000
Employees, rolling mill...	Cincinnati	For increase of wages.....	Yes..	1	133	May 21....	Oct. 11....	133	Partly	10,679	4,389	5,000
Employees, rolling-mill...	Cincinnati	For increase of wages	Yes..	1	154	May 31....	Nov. 1	154	No.....	82,858	32,670	40,000
Employees, rolling-mill...	Cincinnati	For increase of wages	Yes..	1	153	June 1....	Nov. 1	153	No.....	61,425	25,246	25,000
Moulders, iron foundry..	Cleveland	For increase of wages.....	Yes..	1	.....	June 1....	June 4....	3	Partly	115	.....	200

Ax-makers	Cleveland	For increase of wages	Yes..	1	7	Dec. 10 ..	Ap. 10. '82	121	Partly	7,636	\$00	\$00 25,000
<i>Mining.</i>												
Miners, coal.....	Nelsonville.....	Against the use of imperfect scales.....	No...	1	13	Feb. 4	1881 Feb. 17 ...	13	No.....	1,506	.....	148
Miners, coal.....	Salineville.....	Against reduction of wages.....	No...	9	21	Feb. 16 ..	March 9...	21	No.....	16,600	.....	4,710
Miners, coal.....	New Straitsville ..	Against reduction of wages.....	Yes..	6	31	May 1	June 1.....	31	No	2,143	206	11,977
Miners, coal.....	Nelsonville and vicin.	Against reduction of wages.....	Yes..	13	4	May 1	May 5.....	4	Yes.....	10,053	.....	3,582
Miners, coal.....	Einaville.....	For increase of wages.....	Yes..	1	5	Aug. 15 ...	Aug. 20...	5	Yes.....	245	.....	150
Miners, coal.....	Akron District	For increase of wages.....	Yes..	8	6	Oct. 1.....	Oct. 7.....	6	Yes.....	8,100	.....	3,350
Miners, coal.....	Salineville.....	For increase of wages.....	No...	9	3	Oct. 1.....	Oct. 4.....	3	Yes.....	1,665	.....	1,180
Miners, coal.....	Steubenville.....	For increase of wages.....	No...	1	17	Oct. 3.....	Oct. 20 ...	17	Yes.....	3,089	.....	.....
Miners, coal.....	Bridgeport	For discharge of superintendent	No...	1	30	Nov. 1	Dec. 1	30	No.....	6,500	.....	13,000
Miners, coal.....	Steubenville	Against reduction of wages.....	No...	1	30	Nov. 1	Dec. 1	30	No.....	3,779	.....	.....
<i>Printing and Publishing.</i>												
Compositors.....	Cincinnati	For adoption of Union rules.....	Yes..	1	.....	Feb. 9	Feb. 12...	3	No.....	100	.....	50
Compositors.....	Cleveland	For increase of wages.....	Yes..	2	.....	June 1.....	June 11...	10	Yes.....	1,305	100	.....
<i>Rope and Bagging.</i>												
Hanâ spin'rs, rope fact'y	Cincinnati ..	For increase of wages	Yes..	5	10	April 1 ...	April 11 ..	10	Yes.....	4,118	.....	3,400
<i>Ship Building, etc.</i>												
Caulkers	Cleveland	Against reduction of wages.....	No...	2	6	Nov. 1	Nov. 7	6	No.....	563	.....	67
<i>Stone Quarrying & Cutting</i>												
Laborers, quarry.....	Bellefontaine	For increase of wages	No...	1	3	April 25...	April 28...	3	Yes.....	56	.....	100
Stone-cutters	Canton	For increase of wages.....	No...	1	.....	July 23 ...	Aug 7	15	Yes.....	864	.....	75
<i>Tobacco.</i>												
Cigar-makers	Delaware.....	For adoption of new bill of prices	Yes..	1	3	June 15...	June 18...	3	Yes.....	385	120	500
Cigar-makers.....	Newark	For increase of wages	No...	2	1	Sept. 2....	Sept. 3....	1	Yes.....	21	.....	.....
Cigar-makers.....	Newark	For increase of wages	No...	1	2	Sept. 2....	Sept. 4....	2	Yes.....	48	.....	10
Cigar-makers.....	Sandusky	For increase of wages.....	Yes..	5	26	Sept. 26 ...	Oct. 22....	26	Yes.....	699	168	150
<i>Transportation.</i>												
Conductors, drivers and hostlers, street railway	Cincinnati	For reduction of hours and increase of wages	No...	1	5	April 14 ..	April 19 ..	5	Partly	4,648	.....	15,000
1882.												
<i>Boots and Shoes.</i>												
Lasters	Cincinnati	For increase of wages	Yes..	16	14	Jan. 1.....	Jan. 15....	14	Yes.....	27,772	.....	13,867
Lasters	Cincinnati	For discharge of foreman.....	No...	1	63	June 1.....	Aug. 3	63	Yes.....	6,344	.....	40,000
<i>Building Trades.</i>												
Plasterers	Cincinnati	For increase of wages	Yes..	9	61	April 1 ...	June 1....	61	Yes.....	25,938	3,260	4,175
Plasterers	Cincinnati	For increase of wages	Yes..	1	49	April 1 ...	May 20....	49	Yes.....	968	144	200
Plasterers	Cincinnati	For increase of wages	Yes..	1	7	April 1 ...	June 3....	63	Yes.....	6,380	768	1,000
Plasterers	Cincinnati	For increase of wages	Yes..	1	35	April 1 ...	May 7....	35	Yes.....	601	85	175
Carpenters	Cleveland	For uniform rate of wages.....	Yes..	3	.....	April 3 ...	April 8....	5	No.....	1,338	.....	185
Roofers, tin.....	Cincinnati	For increase of wages	Yes..	12	.....	May 1	May 22....	21	No.....	4,608	300	962
Carpenters	Cincinnati	For increase of wages	No...	1	.....	May 1	May 15....	14	No.....	2,970	.....	.....

(a) \$2,000 to all.

(b) Mill burned April 10, 1882.

STRIKES, BY YEARS AND INDUSTRIES—Continued.

Industries and years.	Locality.	Cause or object.	Ordered by labor organization.	Establishments.		Beginning.	End.	Duration (days).	Succeeded.	Employees'—		Employers' loss.
				Number.	Days closed.					Loss.	Assistance.	
1882.							1882.					
Carpenters	Cincinnati	For increase of wages	No...	1	12	May 3.....	May 15 ...	12	No.....	\$1,260	.....	600
<i>Cooperage.</i>												
Employees	Dayton	For increase of wages	No...	8	12	Oct. 4	Oct. 16 ...	12	Yes.....	845	.....	169
<i>Leather & Leather Goods.</i>												
Horse-collar makers	Cincinnati	Against employment of non-union men	No...	1	.....	Jan. 10.....	Jan. 24 ...	14	Yes.....	1,122	.....	.....
<i>Machines and Machinery.</i>												
Employees, safe and lock works	Canton	For full pay for extra work	No...	1	.....	April 1 ...	April 4 ...	3	Yes.....	1,236	.....	400
Boiler-makers	Cincinnati	For increase of wages	Yes..	1	.....	June 5.....	July 17 ...	42	Partly	2,100	360	500
Boiler-makers	Cincinnati	For increase of wages	Yes..	1	42	June 5.....	July 17 ...	42	Partly	1,764	288	500
Boiler-makers	Cincinnati	For increase of wages	Yes..	1	40	June 7.....	July 17 ...	40	Partly	3,000	476	1,200
Moulders, machine shop	Dayton	For reinstatement of disch'd foremen	No...	1	.....	Sept. 24 ...	Oct. 29.....	35	No.....	\$1,425	123	1,000
<i>Metals and Metallic Goods.</i>												
Employees, rolling-mill ..	Columbus	Against employment of non-union men	No...	1	.....	Jan. 12.....	Jan. 26.....	14	No.....	816	.....	.....
Moulders, stove foundry ..	Cleveland	For discharge of non-union moulders ..	Yes..	1	.....	March 22 ..	April 19 ..	28	No.....	2,970	1,283	1,000
Employees, rolling-mill ..	Cleveland	For adoption of association rules	Yes..	1	22	May 9	August 12 ..	95	No.....	376,250	12,000	22,000
Moulders, stove foundry ..	Columbus	For limitation of apprentices	Yes..	1	.....	May 15 ...	May 22.....	7	No	660	.....	.....
Employees, rolling-mill ..	Cincinnati	For adoption of new scale of prices.....	Yes..	3	11	June 1 (a) ..	June 12 ...	11	No.....	12,068	4,810	3,000
Puddlers, iron works.....	Youngstown	For adoption of new scale of prices.....	Yes..	1	114	June 1 (b) ..	Sept. 23 ...	114	No.....	90,000	.....	50,000
Puddlers, iron works.....	Canal Dover	For increase of wages.....	Yes..	1	4	June 1 (b) ..	June 5 ...	4	Yes	990	.....	500
Boilers, rollers, etc., iron works	(a)	For adoption of new scale of prices	Yes..	6	114	June 1 (b) ..	Sept. 23 ...	114	No.....	581,616	19,400	180,000
Boilers, rollers, etc., iron works	Cleveland	For adoption of new scale of prices.....	Yes..	1	92	June 1 (b) ..	Sept. 1	92	No.....	45,474	400	30,000
Moulders, stove foundry ..	Cleveland	For discharge of non-union moulders...	Yes..	1	.....	August 3	Dec. 16.....	135	Yes.....	5,424	1,283	.....
<i>Mining.</i>												
Miners, coal	Dell Roy	Against reduction of wages.....	No...	2	33	March 15 ..	April 17 ..	33	Partly	13,308	.....	1,400
Miners, coal	Oambridge	Against reduction of wages	Yes..	1	16	April 4 ...	April 20 ..	16	Partly	1,705	.....	280
Miners, coal	Cambridge	Against reduction of wages	Yes..	2	14	April 6 ...	April 20 ..	14	Partly	2,923	.....	480
Miners, coal	Cambridge and Byesville	Against reduction of wages	Yes..	4	12	April 8 ...	April 20 ..	12	No.....	8,230	.....	950
Miners, coal	Mineral Ridge.....	Against reduction of wages	Yes..	1	175	May 1	Oct. 23	175	No.....	27,550	18	2,750
Miners, coal	Mineral Ridge.....	Against reduction of wages	Yes..	2	139	May 1	Sept. 17	139	No.....	29,512	.....	2,750

Miners, coal.....	Salineville	Against reduction of wages	Yes..	9	17	May 15....	June 1....	17	No.....	8,076	.....	4,752
Miners, coal.....	Steubenville	Against reduction of wages	No...	1	.....	Sept. 1....	Oct. 9....	38	Yes....	5,376	.....	2,000
Miners, coal.....	Dell Roy and Sherods- ville.....	For increase of wages	No...	3	7	Oct. 2	Oct. 9....	7	Yes....	4,511	.....	450
Drivers and day hands, coal	Wellston	For increase of wages	No...	2	7	Oct. 2....	Oct. 9....	7	No....	1,194	.....	1,000
Drivers and day hands, coal	Wellston	For increase of wages	No...	3	.....	Oct. 2....	Oct. 9	7	No.....	353	.....	62
Miners, coal.....	Akron	For increase of wages	Yes..	3	11	Nov. 11...	Nov. 22...	11	Yes....	5,433	.....	2,281
Miners, coal.....	Mineral Ridge	For increase of wages	Yes..	3	7	Nov. 27...	Dec. 4....	7	Yes....	2,309	.....	300
Miners, coal.....	New Straitsville	Against change from piece work to day work.....	No...	1	14	Dec. 6....	Dec. 20....	14	Yes....	2,882	.....	1,152
Ship-building, etc.	Cleveland	For increase of wages	Yes..	2	7	April 5...	April 12.	7	Yes....	564	.....	67
Caulkers	Canton	For increase of wages	Yes..	1	.....	May 22 ...	June 5....	14	Yes....	72	32	100
Cigar-makers	Canton	For increase of wages	Yes..	1	1	May 22 ...	May 23....	1	Yes....	6	.....	.....
Cigar-makers	Canton	For increase of wages	Yes..	1	.....	May 22 ...	June 7....	16	Yes....	84	35	.....
Cigar-makers	Canton	For increase of wages	Yes..	1	.....	May 22 ...	June 12....	21	Yes....	32	12	25
Cigar-makers	Dayton	For increase of wages	Yes..	1	.....	May 30 ...	July 8....	39	No....	160	61	50
Cigar-makers	Portsmouth ...	Against employment of non-union men	Yes..	7	8	Aug. 4....	Aug. 12....	8	Yes....	407	.....	.....
Cigar-makers	Cincinnati	For increase of wages	No...	1	12	Sept. 2....	Sept. 14...	12	Yes....	3,060	.....	1,000
Cigar-makers	Zanesville	For increase of wages	Yes..	1	9	Oct. 5....	Oct. 14....	9	Yes....	146	84	63
Cigar-makers	Canton	For increase of wages	Yes..	2	.....	Oct. 9....	Oct. 23....	14	Yes....	264	56	75
Cigar-makers	Canton	For increase of wages	Yes..	2	.....	Oct. 9....	Oct. 16....	7	No....	60	20	25
Cigar-makers	Canton	For increase of wages	Yes..	1	.....	Oct. 9....	Oct. 12....	3	Yes....	11	.....	.....
Cigar-makers	Cincinnati	Against reduction of wages	Yes..	1	20	Oct. 22....	Nov. 11...	20	Yes....	360	30	125
Cigar-makers	Cincinnati	Against reduction of wages	Yes..	1	.....	Nov. 13...	Nov. 19...	6	Yes....	48	15	15
1883.							1883.					
Carriages and Wagons.	Sandusky	For increase of wages	No...	1	8	Aug. 10...	Aug. 18...	8	Yes....	2,335	.....	240
Wheel finishers												
Clothing.												
Cloak-makers	Toledo	For increase of wages	No...	1	3	Aug. 22...	Aug. 25...	3	Yes....	457	.....	250
Food Preparations.												
Millers	Massillon.....	Against reduction of wages	No...	1	7	May 1....	May 8....	7	Yes....	45	.....	30
Glass.												
Empl'es, roofing glass wks	Youngstown	For payment of wages for lost time....	No...	1	7	May 28....	June 4....	7	No.....	657	.....	1,000
Empl's, window glass wks	Bellaire, Col'mbus, Ra- venna, and Zanesville	Against reduction of wages	Yes..	5	160	Sept. 1....	Feb. 8....	160	Yes....	109,888	(c)	24,500
Empl'es, bottle glass wks	Massillon..	Against reduction of wages	Yes..	1	118	Sept. 1....	Dec. 28,'83	118	Yes....	10,588	d10,000	7,000
Leather & Leather Goods.												
Harness-makers.....	Cincinnati	For increase of wages and limitation of apprentices.....	Yes..	1	.....	May 5.....	1883. May 26...	21	Partly	1,658	560	2,500

(a) Youngstown, Niles, Girard, Haselton and Leetonia. (b) This is a part of the general strike which involved the iron mills of seven States. The new scale of prices fixed by the Amalgamated Association of Iron and Steel Workers increased the pay of puddlers only—they being 10 per cent. of employees. The increase was only 1 per cent. on former scale. (c) \$58,000 to whole Western District. (d) \$10,000 to whole Western District. See Pennsylvania.

STRIKES, BY YEARS AND INDUSTRIES—Continued.

Industries and years.	Locality.	Cause or object.	Ordered by labor organization.	Establishments.		Beginning.	End.	Duration (days).	Succeeded.	Employees'—		Employers' loss.
				Number.	Days closed.					Loss.	Assistance.	
1883.							1883.					
Harness-makers.....	Cincinnati	For increase of wages and limitation of apprentices.....	Yes..	1	.....	May 5	June 9.....	35	Partly	\$4,300	\$850	\$5,500
<i>Metals and Metallic Goods.</i>												
Moulders, stove foundry	Portsmouth	For discharge of apprentices	No...	1	.....	Jan. —, ...	Feb. —, ...	31	No.....	1,000	.....	1,500
Moulders, stove foundry	Akron.....	Against reduction of wages.....	Yes..	1	21	Feb. 19....	Mar. 12 ...	21	No.....	5,119	775	900
Boltmakers, iron works.....	Cleveland	Against reduction of wages	No...	1	.....	April —, ...	May —, ...	30	No.....	1,226	.....	.....
Moulders, stove foundry	Cleveland	For discharge of non-union employees.	No...	1	.....	April 16....	April 23....	7	No.....	1,073	.....	500
Puddlers, iron works	Leetonia	Against poor quality of material.....	No...	1	2	April 20....	April 22....	2	Yes.....	683	.....	.....
Moulders, hardware fac'y	Cleveland	For increase of wages	No...	1	.....	May 7.....	June 27....	51	No.....	8,353	.....	.....
Boilers, rollers, etc., iron works	Portsmouth	For adoption of association prices	Yes..	1	21	June 1.....	June 22....	21	No	9,000	.....	.....
Boilers and helpers, iron works	Portsmouth	For adoption of association prices.	Yes..	1	7	June 1.....	Nov. 1.....	154	No.....	26,000	.....	5,000
Boilers and helpers, iron works	Cleveland	For adoption of association prices.....	Yes..	1	8	June 1.....	June 9.....	8	No.....	4,536	.....	.....
Horseshoers.....	Cincinnati	For increase of wages.....	Yes..	26	14	June 3.....	June 17....	14	Yes.....	2,244	.....	2,500
Top fillers, iron furnace..	Girard.....	Against reduction of force and wages ..	No...	1	3	July 9.....	July 12....	3	Partly	601	.....	200
Horseshoers.. ..	Cleveland	For increase of wages	Yes..	8	.....	July 25....	July 26....	1	Yes.....	22	.....	.....
Employees, chain works ..	Akron	Against reduction of wages.....	Yes..	1	81	Sept. 13....	Dec. 3.....	81	No.....	3,276	90	3,000
Moulders, stove foundry ..	Martin's Ferry	Against reduction of wages	Yes..	1	14	Oct. 31....	Nov. 14 ...	14	Yes.....	756	.....	189
Moulders, iron foundry..	Toledo	For restoration of wages.....	Yes..	7	.....	Dec. 11....	Dec. 18....	7	No.....	945	552	2,300
Tinners, tinware factory ..	Cincinnati	Against reduction of wages	Yes..	1	.....	Dec. 20....	Jan. 31, '84	42	Yes.....	2,117	.....	500
<i>Mining.</i>												
Miners, coal.....	Etnaville.. ..	Against reduction of wages	Yes..	1	25	Jan. 3.....	Jan. 28, '83	25	No.....	1,563	.....	500
Miners, coal.....	Salineville	Against reduction of wages	No...	10	43	Feb. 12....	Mar. 27.. ..	43	No.....	17,220	.....	10,102
Miners, coal.....	Dell Roy and Sherodsville	Against reduction of wages	No...	3	43	Mar. 15....	April 27 ..	43	Partly	32,496	.....	3,000
Miners, coal.....	Washingtonville	Against reduction of wages	No...	1	47	April 2.....	May 19.....	47	Partly	8,183	.....	500
Miners and laborers, coal	Gore and N Straitsville	Against increase of hours and reduction of wages.....	No...	9	13	April 19....	May 2.....	13	No.....	26,865	.....	10,794
Miners and laborers, coal	Carbon Hill, Haydensville, Murray City, N. Longstreth, N. Straitsville, Sand Run and Shawnee	Against increase of hours and reduction of wages.....	No...	13	12	April 20 ..	May 2.....	12	No.....	33,772	.....	13,988

Miners, and laborers, coal	Buchtel and Nelsonville.....	Against increase of hours and reduction of wages	No...	6	9	Apr. 23....	May 2.....	No.....	12,674	.....	5,068
Drivers and day hands, coal	Wellston	Against reduction of wages	Yes..	4	14	Apr. 23....	May 7.....	No	8,818	.....	1,764
Miners, coal	Bellaire	Against reduction of wages	Yes..	1	149	May 1....	Sept. 27...	Yes.....	10,000	.....	6,000
Miners, coal	Bellaire	Against reduction of wages	Yes..	1	123	May 1....	Sept. 1....	Yes.....	11,422	.....	10,000
Miners, coal	Leetonia	For increase of wages.....	No...	1	17	June 13...	June 30...	No.....	2,346	.....	300
Miners, coal	Steubenville	Against reduction of wages	No...	1	96	July 16 ...	Oct. 20....	No	12,000	.....	2,200
Miners, coal	Del Roy and Sherodsville.....	For increase of wages	No...	3	7	Sept. 1....	Sept. 8....	Yes.....	5,021	.....	450
Miners, coal	Massillon.....	For increase of wages.....	Yes..	7	9	Sept. 1....	Sept. 10...	Yes.....	14,150	.....	5,591
Miners, coal	Akron District	For increase of wages.....	Yes..	5	11	Sept. 1....	Sept. 12...	Yes.....	10,118	.....	2,750
Miners, coal	Washingtonville.....	For increase of wages.....	No...	1	4	Sept. 6....	Sept. 10...	No.....	767	.....	150
Miners, coal	Youngstown	For increase of wages	No...	1	2	Oct. 2.....	Oct. 4.....	Partly	250	.....	40
Pottery, Earthenware, etc.	Steubenville	Against violation of agreement.....	No...	1	.....	Nov. 6.....	Nov. 13...	Partly	90	.....	100
Apprentices, pottery work .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Printing and Publishing.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Compositors.....	Toledo	For discharge of foreman and reinstatement of discharged employees.....	Yes..	1	.....	Jan. 20....	Feb. 20 ...	No.....	749	.....	150
Compositors.....	Cincinnati	Against "bastard" type.....	Yes..	1	1	Nov. 20...	Nov. 21...	Yes.....	34	.....	25
Stone Quarrying & Cutting.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Stone-cutters	Canton.....	For increase of wages	No...	1	.....	Feb. 27 ...	Mar. 27 ...	Yes.....	1,500	.....	120
Quarrymen.....	Massillon.....	For increase of wages	No...	2	6	Apr. 19 ...	Apr. 25 ...	No.....	1,154	.....	375
Telegraphy. (Strike of Tobacco.	July 19. See N. Y).	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cigarmakers	Urbana.....	Against reduction of wages	Yes..	1	.....	Jan. 29....	Feb. 4	Yes.....	48	16	.....
Cigarmakers	Zanesville	Against reduction of wages	Yes..	1	42	Feb. 27....	Apr. 10 ...	Yes.....	774	336	300
Cigarmakers	Newark	Against truck system.....	Yes..	1	.....	Feb. 28....	Apr. 4	Yes.....	133	56	50
Cigarmakers	Cleveland	Against reduction of wages	Yes..	1	7	Mar. 1	Apr. 7	No	154	64	50
Cigarmakers	Cincinnati	For increase of wages.....	Yes..	3	7	Apr. 10 ...	Apr. 17 ...	Yes..	7,850	.....	1,350
Cigarmakers	Cincinnati	For increase of wages.....	Yes..	1	3	Apr. 10 ...	Apr. 13 ...	Yes..	203	.....	35
Cigarmakers	Akron	For increase of wages.....	Yes..	2	7	May 1.....	May 8	Yes.....	90	.....	18
Packers	Cincinnati	For increase of wages.....	Yes..	15	1	May 1.....	May 2.....	Yes.....	289	.....	50
Cigarmakers	Columbus.....	For increase of wages and against truck system	Yes..	1	7	May 1.....	May 8	No.....	16	14	.....
Cigar-makers	Eaton	For increase of wages	Yes..	1	42	May 1.....	June 12...	No.....	2,340	480	1,000
Cigar-makers	German town	For increase of wages	Yes..	1	21	May 1.....	June 6....	Yes.....	400	120	115
Cigar-makers	Mansfield	For increase of wages	Yes..	1	10	May 1.....	May 11....	No.....	758	55	.....
Cigar-makers	Newark	For increase of wages	Yes..	3	1	May 1.....	May 2.....	Yes.....	18	.....	.....
Cigar-makers	Newark	For increase of wages	Yes..	2	14	May 1 ...	May 15....	Yes.....	421	514	1,000
Cigar-makers	Newark	For increase of wages	Yes..	1	46	May 1.....	June 16...	Yes.....	780	336	156
Cigar-makers	Portsmouth	For increase of wages	Yes..	72	72	May 1.....	July 12....	Yes.....	3,910	1,240	950
Cigar-makers	Toledo	For increase of wages	Yes..	2	.....	May 1.....	July 4.....	No.....	86	.....	.....
Cigar-makers	Toledo	For increase of wages	Yes..	1	.....	May 1.....	May 21....	Yes.....	536	.....	1,000
Cigar-makers	Toledo	For increase of wages	Yes..	1	.....	May 1.....	May 21....	No.....	306	.....	200
Cigar-makers	Urbana	For increase of wages	No...	2	1	May 1.....	May 2	Yes.....	67	.....	.....
Ciggr-makers	Zanesville	For increase of wages	Yes..	1	3	May 28....	May 31....	Yes.....	65	28	.....
Ciggr-makers	Zanesville	For increase of wages	Yes..	1	6	May 28....	June 3....	Yes.....	51	24	.....

STRIKES, BY YEARS AND INDUSTRIES—Continued.

Industries and years.	Locality.	Cause or object.	Ordered by labor organization.	Establishments.		Beginning.	End.	Duration (days).	Succeeded.	Employees'—		Employers' loss.
				Number.	Days closed.					Loss.	Assistance.	
1883.							1883.					
Cigar-makers.....	Norwalk.....	For weekly payments.....	Yes..	1	.....	June 4....	June 15...	11	Yes....	\$47	\$12	\$20
Cigar-makers.....	Urbana.....	Against reduction of wages.....	Yes..	1	.....	June 30...	July 7	7	Yes....	27	8	.....
Cigar-makers.....	Dayton.....	For discharge of non-union employees..	Yes..	3	.....	Aug. 14....	Sept. 4....	21	No.....	1,621	624	5,560
Cigar-makers.....	Urbana.....	Against reduction of wages and use of "bunch-breaking" machine.....	Yes..	1	42	Nov. 16....	Dec. 28....	42	No.....	935	680	50
Miscellaneous.												
Silver-gilders' picture frame factory.....	Cincinnati.....	For increase of wages.....	Yes..	3	.....	April 18....	April 19....	1	No.....	80	.....	.....
1884.							1884.					
Agricultural Implements.												
Moulders, boiler-makers and machinists, mower and reaper works.....	Massillon.....	Against new system of keeping time.....	No...	1	.....	Mar. 1.....	Mar. 2....	1	No.....	600	.....	.....
Carriages and Wagons.												
Trimmers.....	Cincinnati.....	Against employment of additional apprentices.....	No...	1	.....	June 10....	June 17....	7	No.....	432	.....	2,500
Spring-m'k's and helpers	Canton..	Against reduction of wages.....	No...	1	.....	Sept. 1....	Sept. 22....	21	Yes....	648	.....	50
Spring-makers.....	Canton.....	Against reduction of wages.....	No...	1	7	Sept. 24....	Oct. 1.....	7	Yes....	547	.....	170
Furniture.												
Employees, saloon fix'tures' factory.....	Cincinnati.....	Against abolishing lunch-time system..	No...	1	1	May 19....	May 20....	1	No.....	176	.....	50
Glass.												
Blowers, bottle glass-wks	Massillon.....	Against reduction of wages.....	Yes..	1	56	Sept. 1....	Oct. 27....	56	Yes....	5,176	.....	3,800
Employees, flint glass-wks	Martin's Ferry.....	Against adoption of piece-price system	Yes..	1	262	Dec. 13....	Sep. 1, '85	262	Yes....	44,000	5,700	.....
Employees, flint glass-wks	Bellaire and Bridgeport.....	Against adoption of piece-price system	Yes..	2	286	Dec. 13....	Sep. 25, '85	286	Yes....	12,700	12,700	35,000
Employees, flint glass-wks	Bellaire.....	Against adoption of piece-price system	Yes..	4	286	Dec. 13....	Sep. 25, '85	286	Yes....	245,000	33,900	29,500
Employees, flint glass wks	Martin's Ferry ..	Against adoption of piece-price system	Yes..	1	286	Dec. 13....	Sep. 25, '85	286	Yes....	57,000	17,400	10,000
Machines and Machinery.												
Machinists and helpers, railroad machine-shops	Delphos.....	For payment of wages due.....	No...	1	4	April 10....	1884. April 14..	4	Yes....	957	150

BUREAU OF STATISTICS OF LABOR.

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[illegible]

(a) Mine was closed permanently in consequence of strike. (b) Assistance for whole strike, \$97,075. (c) Firm loss for whole strike, \$750,000.

STRIKES, BY YEARS AND INDUSTRIES—Continued.

Industries and years.	Locality.	Cause or object.	Ordered by labor organization.	Establishments.		Beginning.	End.	Duration (days).	Succeeded.	Employees'—		Employers' loss.
				Number.	Days closed.					Loss.	Assistance.	
1884.												
<i>Miscellaneous.</i>												
-makers, tool fac'ry	Sandusky	For increase of wages.....	No...	1	.....	Feb. 11....	Feb. 18, '84	7	No.....	\$305	.....	.....
1885.												
<i>Boots and Shoes.</i>												
Employees	Chillicothe.....	For discharge of foreman.....	No...	1	4	Oct. 20....	Oct. 24, '85	4	Yes....	422	.....	\$600
Cutters	Cincinnati	For increase of wages.....	No...	17	38	Nov. 21....	Dec. 29, '85	38	No.....	72,136	.....	32,617
<i>Carriages and Wagons.</i>												
Trimmers	Cincinnati	Against reduction of wages	No...	1	.....	June 22....	June 25, '85	3	Yes....	250	.....	500
<i>Cooperage.</i>												
Employees	Martin's Ferry	Against reduction of wages	No...	1	.....	Jan. 1.....	Jan. 15, '85	14	Partly	336	.....	100
Employees	Steubenville	Against reduction of wages.....	No...	1	49	Jan. 15....	Mar. 5, '85	49	Partly	1,100	\$9	.....
Coopers	Akron	For increase of wages.....	Yes..	1	.....	Jan. 19....	Feb. 19, '85	31	No.....	1,346	400	3,000
Coopers, flour barrels	Dayton	For increase of wages	No...	8	14	Oct. 19....	Nov. 2, '85	14	No	1,014	.....	202
<i>Glass.</i>												
Blowers, flint glass works	Steubenville	Against performing work for other shops, in which a strike was pending	No...	1	.....	Jan. 15 ...	May 15, '85	120	No.....	16,580	.....	8,000
Blowers, bottle glass wks	Massillon.....	Against reduction of wages	Yes	1	123	Sept. 1....	Jan. 2, '86	123	Yes....	14,774	.....	.....
<i>Metals and Metallic Goods.</i>												
Axleturners, steel works	Coshocton	Against reduction of wages.....	No...	1	.....	Jan. 1.....	Jan. 8, '85	7	No.....	35	.....	50
Employees, nail works....	Bellaire	For reinstatement of discharged employee	Yes..	1	66	April 24 ..	June 29, '85	66	Yes....	27,382	.....	25,000
Nailers, nail works.....	Brilliant	For adoption of association prices.....	Yes..	1	268	June 1....	Feb. 24, '86	268	No.....	86,500	.....	6,000
Nailers, nail works.....	Mingo Junction	For adoption of association prices.....	Yes..	1	268	June 1....	Feb. 24, '86	268	No.....	40,000	.....	5,000
Nailers, etc., nail works..	Martin's Ferry	Against reduction of wages	Yes	1	.....	June 1....	Nov. 1, '85	153	No	103,000	.....	30,000
Nailers, etc., nail works..	Steubenville	Against reduction of wages	Yes..	1	180	June 1....	Nov. 28, '85	180	No.....	53,200	.....	15,000
Employees, iron works....	Girard and Youngst'n	For adoption of association price list...	Yes..	2	82	June 1....	Aug. 22, '85	82	No.....	123,786	8,000	40,000
Employees, iron works....	Youngstown	For adoption of association price list...	Yes..	1	61	June 1....	Aug. 1, '85	61	No	156,000	11,500	75,000
Employees, iron works....	Struthers.....	For adoption of association price list...	Yes..	1	7	June 1....	June 8, '85	7	Yes....	1,134	.....	300
Employees, iron works....	Leetonia	For adoption of association price list...	Yes..	1	18	June 1....	June 19, '85	18	Yes....	5,930	.....	.....
Employees, iron works....	Haselton	For adoption of association price list...	Yes..	1	83	June 1....	Aug. 23, '85	83	No.....	47,088	2,400	15,000
Employees, iron works....	Ironton	For adoption of association price list...	Yes..	1	56	June 1....	July 27, '85	56	No.....	34,070	275	50,000

Employees, iron works....	Ironton	For adoption of association price list....	Yes..	1	42	June 1.....	July 17, '85	42	No	44,305	325	.....
Employees, iron works....	Niles	Against reduction of wages.....	Yes..	1	283	June 1.....	Mar. 11, '86	283	No	100,000	25	15,000
Employees, nail works....	Youngstown	Against reduction of wages.....	Yes	1	394	June 1.....	July 1, '86	394	No	87,360	7,500	12,000
Employees, rolling-mill...	Cleveland	Against reduction of wages.....	No...	1	88	July 1.....	Sep. 27, '85	88	Yes....	410,010	19,000	.....
Employees, bolt works....	Cleveland	Against reduction of wages.....	No...	1	31	Aug. 1.....	Sep. 1, '85	31	No	8,458	.....	500
Employees chain works....	Columbus	Against reduction of wages.....	No...	1	.....	Sep. 5.....	Sep. 23, '85	18	Yes....	1,540	.....	.....
Moulders, stove foundry	Martin's Ferry	Against reduction of wages.....	Yes..	1	28	Oct. 26.....	Nov. 23, '85	28	Yes....	1,410	.....	355
Mining.												
Miners, coal.....	Massillon.....	Against reduction of wages.....	Yes..	7	23	Feb. 2	Feb. 25, '85	23	No	30,769	.....	12,255
Miners, coal.....	Massillon.....	Against reduction of wages.....	Yes..	1	37	Feb. 2	Mar. 11, '85	37	No	15,523	.....	6,321
Miners, coal.....	Jackson County	Against reduction of wages.....	Yes..	15	31	Mar. 1	Apr. 1, '85	31	No	35,602	.....	7,119
Miners, coal.....	Wellston and Coalton	Against reduction of wages.....	Yes..	2	28	Mar. 4	Apr. 1, '85	28	No	3,827	.....	765
Miners, coal.....	Silver Creek.....	Against reduction of wages.....	Yes..	2	2	Mar. 5	Mar. 7, '85	2	No	1,243	.....	.....
Miners, coal.....	Jackson	Against reduction of wages.....	Yes..	1	4	Mar. 28 ..	Apr. 1, '85	4	No	115	.....	.....
Miners, coal.....	Cambridge.....	Against reduction of wages.....	Yes..	4	81	Apr. 1	June 21, '85	81	No	30,000	124	.....
Miners, coal.....	Coshocton County	Against reduction of wages.....	No...	1	13	Apr. 1	Apr. 14, '85	13	No	1,000	.....	23,800
Miners, coal.....	Conesville.....	Against reduction of wages.....	No...	1	12	Apr. 1	Apr. 13, '85	12	No	832	.....	350
Miners, coal.....	(a)	Against reduction of wages.....	No...	5	81	Apr. 1	June 21, '85	81	No	52,800	.....	165
Miners, coal.....	Bellaire	Against reduction of wages.....	Yes..	1	99	Apr. 7	July 15, '85	99	No	4,300	.....	9,790
Miners, coal.....	Bellaire and Franklin	Against reduction of wages.....	Yes..	4	265	Apr. 10....	Jan. 1, '86	265	No	65,812	.....	.....
Miners, coal.....	Mineral Ridge.....	Against reduction of wages.....	Yes..	2	164	May 9	Oct. 20, '85	164	Yes....	32,802	.....	9,900
Miners, coal and iron ore	Mineral Ridge.....	Against reduction of wages.....	No...	1	164	May 9	Oct. 20, '85	164	Yes....	25,025	.....	2,750
Miners, coal.....	Corning and Rendvle	For increase of wages.....	No...	1	6	June 1.....	June 7, '85	6	No	10,000	.....	3,053
Miners, coal.....	Steubenville	Against reduction of wages.....	Yes..	5	13	June 2	June 15, '85	13	No	800	.....	.....
Miners, coal.....	Steubenville	Against reduction of wages.....	No...	1	14	July 25	Sep. 1, '85	38	Partly.	3,811	.....	1,000
Miners, coal.....	Massillon	Against reduction of wages.....	No...	1	31	Aug. 1	Sep. 1, '85	31	Partly.	10,851	.....	2,762
Miners, coal.....	Massillon	Against reduction of wages.....	Yes..	7	37	Aug. 1	Sep. 7, '85	37	Partly.	47,676	.....	20,891
Miners, coal.....	Hocking Valley	Against reduction of wages.....	Yes..	44	3	Sep. 1	Sep. 4, '85	3	Yes....	12,816	.....	5,126
Miners, coal.....	Salineville	For increase of wages.....	No...	9	3	Sep. 1	Sep. 4, '85	3	Yes....	1,963	.....	1,010
Miners, coal.....	Franklin Station	Against reduction of wages.....	Yes..	1	44	Sep. 1	Oct. 15, '85	44	No	2,500	.....	1,500
Miners, coal.....	Massillon	For change of screen.....	Yes..	1	31	Sep. 17....	Oct. 18, '85	31	Yes....	10,187	.....	4,895
Miners, coal.....	Carbondale	For increase of wages.....	No...	1	160	Sep. 22....	Mar. 1, '86	160	Partly.	22,950	2,500	6,885
Miners, coal.....	Nelsonville.....	For increase of wages.....	Yes..	1	3	Sep. 23....	Sep. 26, '85	3	Yes....	212	.....	85
Miners, coal.....	Silver Creek	For change of screen.....	Yes..	2	6	Oct. 1	Oct. 7, '85	6	Yes....	1,923	.....	3-5
Miners, coal.....	Akron, Dennison, Massillon, Nor. Law- rence and Wadsw'th	For change of screen.....	Yes..	16	14	Oct. 5.....	Oct. 19, '85	14	Yes....	44,907	.....	22,024
Miners, coal.....	Bridgeport	For increase of wages.....	No...	1	40	Oct. 12....	Nov. 21, '85	40	No	730	.....	200
Miners, coal.....	Massillon.....	For change of screen.....	Yes..	1	36	Oct. 23....	Nov. 28, '85	36	Yes....	4,297	.....	2,696
Miners, coal.....	Massillon.....	For change of screen.....	Yes..	5	38	Oct. 23....	Nov. 30, '85	38	Yes....	32,210	.....	13,831
Miners, coal.....	Massillon.....	For change of screen.....	Yes..	1	45	Oct. 23....	Dec. 7, '85	45	Yes....	14,715	.....	7,105
Miners, coal.....	Akron, Dennison, Massillon, Nor. Law- rence and Wadsw'th	For change of screen.....	Yes..	10	29	Oct. 23....	Nov. 21, '85	29	Yes....	65,681	.....	32,877
Miners, coal.....	Corning and Rendvle	For increase of wages.....	Yes..	4	19	Nov. 1	Nov. 20, '85	19	Yes....	17,875	.....	7,150
Pottery, Earthenware, etc.	Hocking Valley	For increase of wages.....	Yes..	44	21	Nov. 2	Nov. 23, '85	21	Yes....	100,125	.....	40,031
Clay works and kiln men, pottery works....	East Liverpool	Against reduction of wages.....	No...	5	.....	Apr. 4	Apr. 18, '85	14	Partly.	5,950	.....	1,250

(a) Cambridge, Hartford and Byesville.

STRIKES, BY YEARS AND INDUSTRIES—Continued.

Industries and years.	Locality.	Cause or object.	Ordered by labor organization.	Establishments.		Beginning.	End.	Duration (days).	Succeeded.	Employees'—		Employers' loss.
				Number.	Days closed.					Loss.	Assistance.	
1885.												
Printing and Publishing.												
Compositors.....	Cincinnati	Against reduction of wages	Yes..	1	.....	Jan. 21....	Jan. 22....	1	No.....	\$14	.....	.....
Compositors.....	Springfield	Against reduction of wages	Yes..	1	.....	Jan. 26....	Mar. 23....	56	No.....	1,440	\$270	\$100
Compositors.....	Cincinnati	Against reduction of wages	Yes..	1	.....	Feb. 3....	Mar. 10....	35	No.....	1,000	414	50
Compositors.....	Sandusky	For increase of wages.....	No..	1	.....	Aug. 18....	Aug. 19....	1	No.....	37	.....	25
Stone Quarry'g & Cutting.												
Stone cutters.....	Cincinnati	For increase of wages.....	Yes..	13	.....	June 22....	June 23....	1	Yes.....	515	.....	195
Tobacco.												
Cigar-makers.....	Cleveland	Against reduction of wages.....	Yes..	1	.....	Jan. 5....	July 28....	204	Yes.....	2,200	951	.....
Cigar-makers.....	Cincinnati	Against reduction of wages.....	Yes..	1	.....	Jan. 5....	Jan. 23....	18	No.....	256	324	100
Cigar-makers.....	Columbus	Against reduction of wages.....	Yes..	1	.....	Jan. 19....	June 6....	138	No.....	350	132	25
Cigar-makers.....	Columbus	Against extra work without extra pay.	Yes..	1	.....	Jan. 19....	Feb 9	21	Yes.....	51	24	20
Cigar-makers.....	Cincinnati	Against reduction of wages.....	Yes..	1	.....	Feb. 3....	Aug. 22....	200	No.....	175	112	.....
Cigar-makers.....	Cincinnati	Against reduction of wages.....	Yes..	1	2	Mar. 7....	April 11....	35	No.....	2,000	954	120
Cigar-makers.....	Cincinnati	Against reduction of wages.....	Yes..	1	.....	Mar. 11....	April 15....	35	No.....	1,000	600	400
Cigar-makers.....	Portsmouth	Against reduction of wages.....	Yes..	1	.....	April 6....	June 6....	62	No.....	120	48	25
Cigar-makers.....	Columbus	Against reduction of wages.....	Yes..	1	.....	May 20....	June 13....	24	No.....	30	12	.....
Cigar-makers.....	Columbus	Against reduction of wages.....	Yes..	1	.....	June 13....	Aug. 5....	51	No.....	1,600	996	160
Cigar-makers.....	Canton.....	For enforcement of union apprentice law	Yes..	1	198	Oct. 26....	May 12,'86	198	Yes.....	540	22	1,500
Cigar-makers.....	Dayton	For discharge of non-union man	Yes..	1	21	Dec. 22....	Jan. 12,'86	21	Yes.....	344	59	1,500
Transportation.												
Firemen, railroad.....	Delphos	Against reduction of wages and for pay-	No...	1	.....	Jan. 31....	Feb. 3....	3	No.....	42	.....	.....
Conduct's and brakem'n	Cleveland	ment of wages overdue.....	No..	1	.....	Aug. 3....	Aug. 5....	2	Yes.....	450	.....	.....
Drivers, street railway...	Bellaire	Against reduction of force.....	No..	1	.....	Oct. 2....	Oct. 3....	1	Yes.....	6	.....	10
Miscellaneous.												
Packers, match factory...	Akron	For increase of wages and for chairs....	No...	1	14	Mar. 23....	April 6....	14	Partly	4,136	.....	.....

[illegible]

STRIKES, BY YEARS AND INDUSTRIES—Continued.

Industries and years.	Locality.	Cause or object.	Ordered by labor organization.	Establishments.		Beginning.	End.	Duration (days).	Succeeded.	Employees'—		Employers' loss.
				Number.	Days closed.					Loss.	Assistance.	
1886.												
Employees, billiard table, etc., factory	Cincinnati	For reduction of hours.....	No.....	1	.....	Apr. 28.....	June 3.....	36	No.....	\$5,000	.....	\$9,000
Cabinet-makers	Cincinnati	For reduc'n of hours and incr. of wages	Yes..	1	54	Apr. 28.....	June 21 ..	54	No.....	5,134	\$2,025	2,500
Cabinet-makers	Cincinnati	For increase of wages	Yes..	1	.....	Apr. 29.....	May 3.....	4	No.....	24	.....	.....
Employees	Middleport	For reduction of hours.....	No.....	1	13	May 1	May 14 ..	13	No.....	1,073	.....	.....
Cabinet-makers	Cincinnati	For reduction of hours.....	Yes..	1	14	May 1	May 15 ..	14	No ..	2,000	.....	300
Cabinet-makers	Cincinnati	For reduction of hours.....	Yes..	1	35	May 1	June 5.....	35	No.....	1,750	675	1,000
Cabinet-makers	Cincinnati	For reduction of hours.....	Yes..	1	.....	May 1	June 5 ..	35	No.....	19,670	.....	12,000
Cabinet-makers	Cincinnati	For reduction of hours.....	Yes..	1	.....	May 1	June 14...	44	No.....	1,645	630	250
Cabinet-makers	Cincinnati	For reduction of hours.....	Yes..	2	44	May 1	June 14...	44	No.....	6,632	2,052	4,500
Cabinet-makers	Cincinnati	For reduction of hours.....	Yes..	1	.....	May 3	May 10 ...	7	No.....	276	.....	25
Cabinet-makers	Cincinnati	For reduction of hours.....	Yes..	2	7	May 3	May 10 ...	7	Partly.	472	.....	200
Cabinet-makers	Cincinnati	For reduction of hours.....	No.....	1	.....	May 3	May 13 ...	10	No.....	183	.....	150
Cabinet-makers	Cincinnati	For reduc'n of hours and incr. of wages	Yes..	3	14	May 3	May 17 ...	14	No.....	1,616	.....	400
Cabinet-makers	Cincinnati	For reduc'n of hours and incr. of wages	Yes..	1	21	May 3	May 24 ...	21	No.....	2,014	630	500
Cabinet-makers	Cincinnati	For reduction of hours.....	Yes..	1	21	May 3	May 24 ...	21	Partly.	753	283	150
Cabinet-makers	Cincinnati	For reduction of hours.....	Yes..	1	35	May 3	June 7.....	35	No ..	1,002	300	200
Cabinet-makers	Cincinnati	For increase of wages	Yes..	1	.....	May 3	June 14...	42	No.....	1,944	80	500
Cabinet-makers	Cincinnati	For reduc'n of hours and incr. of wages	Yes..	1	42	May 3	June 14...	42	Partly.	8,892	3,600	2,500
Cabinet-makers	Cincinnati	For reduction of hours.....	Yes..	1	42	May 3	June 14...	42	No.....	2,796	1,350	2,000
Cabinet-makers	Cincinnati	For reduction of hours.....	Yes..	2	49	May 3	June 21...	49	No.....	5,015	1,953	1,100
Cabinet-makers	Cincinnati	For reduction of hours	Yes..	1	.....	May 3	June 21...	49	No.....	2,625	1,050	1,000
Cabinet-makers	Cincinnati	For reduc'n of hours and incr. of wages	Yes..	1	41	May 4	June 14...	41	No.....	7,166	3,780	2,000
Cabinet-makers	Cincinnati	For reduc'n of hours and incr. of wages	Yes..	1	48	May 4	June 21...	48	No.....	1,091	441	300
Employees, saloon fixtu' factory	Cincinnati	For discharge of an employe.....	Yes..	1	33	May 5	June 7.....	33	No.....	2,268	851	1,200
Cabinet-makers	Cincinnati	Against increase of hours	No.....	1	.....	May 10.....	June 1.....	21	No.....	720	.....	500
Cabinet-makers	Cincinnati .....	.....	Yes..	1	19	May 31.....	June 19...	19	No.....	1,155	.....	800
Glass.												
Employees, flint glass wks	Martin's Ferry	Against reduction of wages	Yes..	1	7	Mar. 8.....	Mar. 15 ...	7	Yes.....	892	.....	500
Leather & Leather Goods.												
Harness-makers.....	Cincinnati	For reinstatement of discharged employes	Yes..	1	7	Feb. 8	Mar. 22....	42	Yes ..	3,306	150	1,000
Harness-makers.....	Cincinnati	For increase of wages	Yes..	7	.....	May 24.....	June 28....	35	Partly.	13,568	5,640	33,500

Machines and Machinery.									
Employees, safe and lock works ..	Cincinnati	No...	2	15	May 4.....	1886.	15	Partly	\$27,183
Employers, machine shop	Cincinnati	No...	1	16	May 4.....	May 19....	16	No.....	5,647
Boiler-makers	Cincinnati	No...	4	23	May 5.....	May 20....	23	Partly	5,967
Employees, safe and lock works	Cincinnati	No...	1	12	May 7	May 19....	12	Partly	3,060
Employees, safe and lock works	Cincinnati	No...	1	17	May 7.....	May 24....	17	Partly	1,361
Boiler-makers	Dayton	No...	1	7	May 27....	June 3.....	7	Yes....	472
Metals and Metallic Goods.									
Nailers, nail works.....	Middleport.....	Yes..	1	6	Mar. 10....	Mar. 16 ...	6	Yes....	2,170
Moulders and helpers, iron works	Hillsborough	Yes..	1	39	Mar. 13....	May 15....	63	Yes....	2,665
Moulders, iron works....	Cleveland	No...	1	.....	Apr. 12....	April 22....	10	Yes....	1,000
Moulders, iron foundry..	Cleveland	No...	1	16	Apr. 13....	April 29....	16	Yes....	4,299
Moulders, iron foundry..	Cleveland	No...	1	5	Apr. 24....	April 29....	5	Yes....	631
Moulders, brass works...	Dayton	No...	1	11	Apr. 30....	May 11....	11	Part y	927
Employees, stove foundry	Cleveland	No...	1	31	May 1.....	June 1.....	31	Yes....	5,634
Employees, architectural, etc., iron works	Cincinnati	No...	1	10	May 3	May 13....	10	Partly	753
Employees, architectural, etc., iron works	Cincinnati	No...	1	12	May 3.....	May 15....	12	Partly	1,654
Employees, bolt works...	Cleveland	No...	1	12	May 3.....	May 15....	12	No	1,697
Fluishers, brass works...	Dayton	No...	1	.....	May 13....	May 25....	12	Partly	734
Moulders, stove foundry	Hanging Rock	No...	1	21	June 7....	June 28....	21	Partly	1,100
Labourers, iron works...	Aetnaville.....	Yes..	2	12	July 5....	July 17 ...	12	Yes...	9,009
Roughers, rolling-mill..	Youngstown	No...	1	.....	Aug. 11....	Aug. 14....	3	Yes...	353
Feeders, nail works.....	Steubenville.....	No...	1	2	Aug. 20....	Aug. 26 ...	6	Partly	605
Feeders, nail works.....	Youngstown	No...	1	3	Sept. 9....	Sept. 12....	3	No ...	374
Moulders, hardw'c factory	Canton	No...	1	.....	Nov. 17....	Nov. 18 ...	1	Partly	46
Employees, steel works...	Canton	No...	1	1	Nov. 18....	Nov. 19 ...	1	Partly	198
Moulders, iron foundry..	Cleveland	Yes..	1	1	Dec. 27....	J-n. 6, '87	10	No.....	446
Moulders, iron foundry..	Cleveland	Yes..	1	27	Dec. 28....	Jan. 24, '87	27	No.....	3,347
Mining.									
Miners, coal.....	Linton	No...	1	72	Jan. 4	1886.	72	Yes....	5,300
Miners, coal.....	North Industry	No...	1	119	Jan. 16....	March 17..	119	No ...	3,264
Miners' coal.....	Mineral Point, N. In-	No...	6	147	Jan. 16....	June 12....	147	No.....	22,848
Miners, coal.....	dustry and Sandyv'le	No...	1	21	Feb. 20....	(c) Mar. 13	21	No.....	2,183
Miners, iron ore.....	Mineral Ridge.....	No...	1	.....	Mar. 15 ...	April 14....	80	No.....	1,931
Miners, coal.....	Ironton	No...	1	61	April 15...	June 15 ...	61	No.....	778
Miners, coal.....	Buchtel	Yes..	1	141	April 15...	S pt. 3....	141	No.....	9,000
Miners, coal.....	Franklin Station.....	Yes..	1	178	April 15...	Oct. 10....	178	No.....	5,000
Miners, coal.....	Conesville	Yes..	1	187	May 21....	Dec 4.....	197	No.....	8,539
Miners, coal.....	Yorkville.....	Yes..	1	.....	.....	.....	.....	.....	.....

(a) The question as to manner of payment arose between Roughers and Rollers, not between employees and firm. (b) The question of wages arose between Feeders and Nailers, not between employees and firm. (c) At this time the owners allowed the mine to fill with water and abandoned it permanently.

STRIKES, BY YEARS AND INDUSTRIES—Continued.

Industries and years.	Locality.	Cause or object.	Ordered by labor organization.	Establishments.		Beginning.	End.	Duration (days).	Succeeded.	Employees'—		Employees' loss.
				Number.	Days closed.					Loss.	Assistance.	
1886.												
Miners, coal.....	Youngstown	For semi-monthly payments.....	No...	1	1	June 26...	1886 June 27...	1	Yes	\$72	.....	\$25
Miners, coal.....	Brachears, Brush Fork and Monday	For increase of wages	Yes..	3	36	June 26...	Aug. 1....	36	Yes	9,860	\$1,204	4,512
Miners, coal.....	Bellaire	For reinstatement of discharged employee	No...	1	21	Aug. 16...	Sept. 6....	21	No.....	1,715	.....	700
Miners, coal.....	Ironton	For increase of wages.....	No...	1	1	Oct. 12....	Oct. 13....	1	No.....	110	.....	40
Miners, coal.....	Wellston	For change of mine scales	No...	1	14	Nov. 17...	Dec. 1	14	No.....	2,356	.....	1,080
Miners, coal.....	Youngstown	For increase of wages.....	Yes..	1	1	Dec. 1....	Dec. 2.....	1	Yes	47	.....	20
Miners and laborers, coal	Coalton, Jackson and Wellston	For increase of wages.....	Yes..	36	19	Dec. 1....	(a) Dec. 20	19	No (a)...	34,927	300	15,810
Miners, coal.....	Youngstown	For increase of wages.....	Yes..	3	19	Dec. 1....	Dec. 20....	19	Yes	6,533	.....	2,678
Miners, coal.....	Youngstown	For increase of wages.....	Yes..	2	14	Dec. 6....	Dec. 20....	14	Yes	2,882	.....	1,246
Miners, coal.....	Youngstown	For increase of wages.....	Yes..	1	13	Dec. 7....	Dec. 20....	13	Yes	3,560	.....	1,818
Miners, coal.....	Youngstown	For increase of wages.....	Yes..	2	11	Dec. 9....	Dec. 20....	11	Yes	888	.....	401
Miners, coal.....	Youngstown	For increase of wages.....	Yes..	1	1	Dec. 10...	Dec. 11....	1	Yes	301	.....	40
Miners, coal.....	Ironton	For increase of wages.....	No...	1	3	Dec. 16...	Dec. 19....	3	Partly..	341	.....	50
Miners, coal.....	Mineral Ridge.....	For increase of wages.....	Yes..	2	12	Dec. 16...	Dec. 28....	12	Yes	4,353	.....	1,320
Pottery, Earthenware, etc.												
Empl'yes, sewer-pipe and drain-tile works.....	Columbus	For incr. of wages or reduction of hours	No...	1	.....	May 3.....	May 6.....	3	Yes	180	.....	.....
Printing and Publishing.												
Compositors.....	Cleveland	For increase of wages.....	Yes	1	.....	Aug. 11...	Aug. 18...	7	Yes	882	.....	200
Lithographers.....	Cincinnati	Against increase of hours	Yes..	2	.....	Sept. 4....	Oct. 16....	42	Yes	1,350	464	500
Lithographers.....	Cincinnati	Against increase of hours	Yes..	1	.....	Sept. 4....	Dec. 24....	111	No.....	4,923	1,695	8,000
Lithographers.....	Cincinnati	Against increase of hours	Yes..	1	.....	Sept. 4....	Jan. 3, '87	121	No.....	405	141	.....
Public Ways Construction.												
Pavers and teamsters, street improvement.....	Cincinnati	For reduction of hours.....	No...	1	11	May 1.....	1886. May 12....	11	No.....	14,963	.....	6,000

(a) Employees returned to work December 20, 1886, pending arbitration; no decision rendered December 31, 1886.

Public Works Construction.	Laborers, laying sewers. Laborers, water works....	Springfield.....	For increase of wages.....	Yes..	1	June 15... Sept. 24...	June 16... Oct. 1.....	1 7	No..... Yes.....	9 450	..... .....	..... 96
		Massillon.....	For increase of wages.....	No...	1							
	Railroad Cars.											
	Carpenters and body- makers, car works.....	Dayton.....	For increase of wages.....	No...	1	Mar. 3....	Mar. 4....	1	No.....	79	.....	75
		Lowellville and Youngstown	For increase of wages.....	No...	2	April 1... Sept. 21...	April 12... Oct. 4	11 13	Yes..... Partly..	5,128 2,160	..... 200	4,000 3,000
Stone Quarrying & Cutting.	Quarrymen, limestone...	Cleveland	For increase of wages.....	Yes..	1							
		Massillon.....	For reinstatement of discharged employee	Yes..	1	April 24... June 24...	May 7.....	13	No.....	242	46	150
	Stone cutters.....	Delaware.....	For increase of wages.....	Yes..	1	June 24... June 24...	July 22... Aug. 2.....	28 70	No..... No.....	2,670 751	990 3.0	5,000 300
		Delaware.....	For increase of wages and against truck system	Yes..	2	June 28... June 30...	Sept. 1.... July 4.....	65 4	No..... Yes.....	4,800 25	1,748 11	3,500
	Cigar-makers.....	Piqua.....	For increase of wages.....	No...	1	Oct. 25....	Oct. 30....	5	No.....	539	.....	2,000
Tobacco.	Stemmers	Middletown	For increase of wages.....	No...	1							
		Columbus	For reduction of hours and incr. of wages	No...	1	Mar. 18...	Mar. 28...	10	Partly..	384	.....	1,150
	Transportation.	Dayton	For reduction of hours and incr. of wages	No...	1	Mar. 24..	Mar. 29...	5	Partly..	105	.....	619
		Dayton.....	For reduction of hours and incr. of wages	No...	1	Mar. 24... May 1.....	April 3... May 6.....	10 5	Partly.. Yes.....	173 980	..... .....	905 1,000
	Freight handlers, R. R....	Cincinnati	For increase of wages.....	No...	2	May 3.....	May 6.....	3	Yes.....	863	.....	3,300
Watches.	Freight handlers, R. R....	Cincinnati	For increase of wages.....	No...	1	May 4.....	May 6.....	2	Yes.....	.....	.....	1,500
		Dayton	For increase of wages.....	No...	1	June 9....	June 12...	3	No.....	38	.....	500
	Conductors, brakemen, etc	Youngstown	For increase of wages.....	No...	1	Sept. 8....	Sept. 9....	1	Yes.....	31	.....	.....
		Cincinnati	For increase of wages.....	No...	1	Sept. 16... Sept. 30...	Sept. 18... Sept. 30...	2 2	Yes..... Yes.....	162 258	..... .....	50 1,300
	Switchmen	Cincinnati	For increase of wages.....	No...	3	Sept. 23... Sept. 28...	Sept. 1.... Oct. 1.....	3 3	Yes..... Yes.....	604 513	..... .....	8,250 1,500
Employees, watch factory	Brakemen.....	Cleveland, N. Lisbon, Youngstown, etc....	For increase of wages and pay for over- time work.....	No...	1	Oct. 6.....	Oct. 13....	7	Partly..	10,850	.....	8,500
		Columbus.....	Against reduction of wages.....	No...	1	April 2...	April 5...	3	Yes.....	435	.....	.....
	Wooden Goods.											
	Carpenters, planing-mill Carpenters, planing-mill	Cincinnati	For reduction of hours.....	Yes..	1	May 1.....	May 15....	14	No.....	2,152	.....	4,000
		Cincinnati	For reduction of hours.....	Yes..	1	May 3.....	May 10....	7	Yes.....	672	.....	667
	Employees, coffin factory..	Cincinnati	For reduction of hours.....	No...	1	May 3.....	May 12....	9	No.....	3,197	.....	3,000

STRIKES, BY YEARS AND INDUSTRIES—Continued.

Industries and years.	Locality.	Cause or object.	Ordered by labor organization.	Establishments		Beginning.	End.	Duration (days).	Succeeded.	Employees'—		Employers' loss.
				Number.	Days closed.					Loss.	Assistance.	
1886.							1886.					
Employes, coffin factory..	Cincinnati	For reduction of hours.	No...	1	.....	May 3.....	May 15.....	12	No.....	\$1,578	.....	\$1,000
Employes, coffin factory..	Cincinnati	For reduction of hours.	No...	1	11	May 4.....	May 15.....	11	No.....	837	.....	2,000
Carpenters, planing-mill	Cincinnati	For reduction of hours.	Yes..	1	.....	May 5.....	May 15.....	10	No.....	788	.....	500
Carpenters, planing-mill	Cincinnati	For reduction of hours.	Yes..	2	14	May 6.....	May 20.....	14	No.....	700	.....	550
Carpenters, planing-mill	Cincinnati	For reduction of hours.	Yes..	1	26	May 6.....	June 1.....	26	No.....	3,000	.....	2,000
Carpenters, planing-mill	Dayton.....	For weekly payments.....	Yes..	1	1	May 10.....	May 11.....	1	Yes.....	37	.....	.....
Carpenters, planing-mill	Cincinnati	For reduction of hours.	Yes..	1	10	May 10.....	May 20.....	10	No.....	1,161	.....	2,000
Carpenters, planing-mill	Cincinnati	For reduction of hours.	Yes..	1	21	May 14.....	June 4.....	21	No.....	1,727	.....	10,000
Carpenters, planing-mill	Cincinnati	For reduction of hours.	No...	1	.....	May 15.....	May 21.....	9	No.....	984	.....	.....
Carpenters, planing-mill	Cincinnati	For reduction of hours.	Yes..	1	10	May 15.....	May 25.....	10	No.....	425	.....	200
Carpenters, planing-mill	Cincinnati	Against increase of hours.....	Yes..	1	.....	May 17.....	May 31.....	14	No.....	1,314	.....	.....
Carpenters, planing-mill	Cincinnati	For reduction of hours.	Yes..	1	13	May 19.....	June 1.....	13	No.....	1,045	.....	2,500
<i>Miscellaneous.</i>												
Dippers, match factory...	Akron	For increase of wages.	No...	1	.....	April 3...	April 7...	4	No.....	51	.....	100
Scrapers, starch factory..	Lockland	For incr. of wages or reducti'n of hours	No...	1	.....	May 3...	May 4.....	1	No.....	14	.....	300
Street cleaners	Cincinnati	For increase of wages.	No...	1	4	May 5.....	May 9.....	4	Yes.....	840	.....	.....

STRIKES, BY YEARS AND INDUSTRIES.

[From advance sheets of 3d Annual Report U. S. Bureau of Labor].

Industries and years.	Number of employees.				Average daily wages.				Employees striking.			Employees striking and involved.			New employees after strike.			Brought from other places.	Weekly working hours.	
	Before strike.		After strike.		Before strike.		After strike.		Number.	Daily pay.		Male.	Female.	Total.	Male.	Female.	Total.		Before strike.	After strike.
	Male.	Female.	Total.	Male.	Female.	Total.	Before.	After.												
1831.																				
Agricultural Implements.																				
Wood-workers and helpers	340	.....	340	340	.....	340	\$1 22	.....	\$1 22	.....	18	\$1 72	\$1 72	18	.....	18	.....	60	60
Boots and Shoes.																				
Bottomers.....	40	35	75	37	35	72	1 58	\$ 70	1 58	\$ 70	30	1 86	1 86	40	35	75	.....	60	60
Pullers—over.....	300	260	560	300	260	560	1 54	83	1 54	83	4	2 50	2 75	28	.....	28	.....	60	60
Brewing.																				
Brewers	190	.....	190	170	.....	170	2 00	.....	2 00	.....	151	2 15	2 15	190	.....	190	.....	72	72
Brewers	80	.....	80	80	.....	80	2 00	.....	2 00	.....	35	2 20	2 20	80	.....	80	.....	72	72
Brewers	290	.....	290	290	.....	290	2 00	.....	2 00	.....	215	2 15	2 15	215	.....	215	.....	72	72
Brewers	37	.....	37	17	.....	17	2 00	.....	2 00	.....	26	2 15	2 15	37	.....	37	.....	72	72
Brewers	125	.....	125	125	.....	125	2 00	.....	2 00	.....	80	2 15	2 15	80	.....	80	.....	72	72
Brewers	55	.....	55	55	.....	55	2 00	.....	2 00	.....	10	2 15	2 15	40	.....	40	.....	72	72
Brewers	55	.....	55	55	.....	55	2 00	.....	2 00	.....	32	2 15	2 15	32	.....	32	.....	72	72
Brick.																				
Employees	293	.....	293	292	.....	292	2 08	.....	2 58	.....	255	2 10	2 60	293	.....	293	.....	75	75
Building Trades.																				
Carpenters	63	.....	63	63	.....	63	2 00	.....	2 25	.....	58	2 13	2 38	63	.....	63	.....	60	60
Carpenters	75	.....	75	75	.....	75	2 20	.....	2 45	.....	60	2 20	2 45	75	.....	75	.....	60	60
Carpenters	25	.....	25	20	.....	20	2 25	.....	2 50	.....	25	2 25	2 50	25	.....	25	.....	60	60
Carpenters	75	.....	75	75	.....	75	2 30	.....	2 55	.....	60	2 30	2 55	75	.....	75	.....	60	60
Carpenters	50	.....	50	50	.....	50	2 10	.....	2 35	.....	35	2 10	2 35	50	.....	50	.....	60	60
Roofers—tin	219	.....	219	189	.....	189	1 92	.....	2 42	.....	189	2 00	2 50	219	.....	219	.....	59	59
Carriages and Wagons.																				
Painters.....	600	25	625	600	25	625	1 50	75	1 50	75	180	1 34	1 34	180	.....	180	.....	60	60
Clothing.																				
Tailors	30	40	70	30	40	70	2 50	1 00	3 00	1 00	25	2 50	3 00	25	.....	25	.....	60	60

STRIKES, BY YEARS AND INDUSTRIES—Continued.

Industries and years.	Number of employees.				Average daily wages.				Employees striking.			Employees striking and involved.			New employees after strike.			Brought from other places.	Weekly working hours.	
	Before strike.		After strike.		Before strike.		After strike.		Number.	Daily pay.		Male.	Female.	Total.	Male.	Female.	Total.		Before strike.	After strike.
	Male.	Female.	Total.	Total.	Male.	Female.	Male.	Female.		Before.	After.									
1881.																				
Cooperage.																				
Employees	155	.....	155	.....	\$1 65	.....	\$1 65	.....	155	\$1 65	\$1 65	155	.....	155	.....	.....	.....	60	60
Employees	15	.....	15	.....	1 73	.....	1 73	.....	15	1 73	1 73	15	.....	15	.....	.....	.....	60	60
Employees	18	.....	18	.....	1 58	.....	1 58	.....	18	1 58	1 58	18	.....	18	.....	.....	.....	60	60
Employees	7	.....	7	.....	1 65	.....	1 65	.....	7	1 65	1 65	7	.....	7	.....	.....	.....	60	60
Cotton Goods.																				
Spoolers and twisters	50	250	300	300	1 40	\$0 75	1 40	\$0 75	250	75	75	50	250	300	.....	.....	.....	65	62
Weavers	50	120	170	165	80	75	80	75	72	90	90	50	120	170	.....	6	.....	65	65
Food Preparations.																				
Stick-candy makers	127	120	247	247	1 88	60	1 93	60	34	2 86	3 00	34	.....	34	4	.....	4	58	58
Machines and Machinery.																				
Moulders, machine shop	150	.....	150	.....	1 75	.....	1 88	.....	26	2 50	3 00	150	.....	150	16	.....	16	60	60
Moulders and boiler-makers, machine shop	130	.....	130	.....	91	.....	95	.....	32	2 05	2 23	61	.....	61	7	.....	7	60	60
Metals and Metallic Goods.																				
Moulders, stove foundry	23	.....	23	.....	2 23	.....	2 35	.....	13	2 85	3 06	23	.....	23	.....	.....	.....	54	54
Moulders, stove foundry	582	.....	582	.....	1 91	.....	2 16	.....	368	2 59	2 98	582	.....	582	.....	.....	.....	60	60
Moulders, hardware factory	260	.....	254	.....	1 44	.....	1 50	.....	65	2 00	2 25	95	.....	95	8	.....	8	60	60
Moulders, iron foundry	340	.....	390	.....	1 66	.....	1 78	.....	140	2 25	2 53	320	.....	320	50	.....	50	60	60
Moulders, iron foundry	458	.....	470	.....	1 79	.....	1 88	.....	158	2 25	2 53	458	.....	458	35	.....	35	60	60
Moulders, iron foundry	170	.....	170	.....	1 62	.....	1 67	.....	31	2 25	2 53	57	.....	57	.....	.....	.....	60	60
Moulders, iron foundry	28	.....	28	.....	1 71	.....	1 79	.....	8	2 25	2 53	28	.....	28	.....	.....	.....	60	60
Moulders, iron foundry	155	.....	140	.....	1 60	.....	1 67	.....	23	2 25	2 53	45	.....	45	.....	.....	.....	60	60
Moulders, stove foundry	70	.....	70	.....	1 84	.....	1 84	.....	34	2 52	2 52	34	.....	34	10	.....	10	60	60
Moulders, iron works	200	.....	200	.....	1 75	.....	1 75	.....	45	2 62	2 62	140	.....	140	.....	.....	.....	60	60
Employees, stove foundry	44	.....	44	.....	2 50	.....	2 32	.....	31	2 50	2 25	44	.....	44	7	.....	7	60	60
Nail plate tenders, nail works ..	507	.....	507	.....	1 97	.....	1 97	.....	6	2 75	3 03	507	.....	507	.....	.....	.....	66	66
Employees, rolling-mill	42	.....	42	.....	2 25	.....	2 30	.....	4	4 75	5 07	42	.....	42	.....	.....	.....	72	72
Employees, rolling-mill	275	.....	275	.....	2 30	.....	2 30	.....	12	5 50	5 50	275	.....	275	.....	.....	.....	72	72
Employees, rolling-mill	210	.....	210	.....	2 25	.....	2 25	.....	7	5 43	5 43	210	.....	210	.....	.....	.....	72	72
Moulders, iron foundry	30	.....	30	.....	1 91	.....	2 10	.....	20	2 25	2 53	20	.....	20	.....	.....	.....	60	60
Axe-makers	109	.....	109	.....	1 40	.....	1 47	.....	75	3 03	3 18	109	.....	109	50	.....	50	54	54

Mining.																			
Miners, coal.....	55	50	\$2 49	.....	\$2 48	.....	50	\$2 58	\$2 58	55	.....	55	.....	.....	.....	.....	.....	60	60
Miners, coal.....	527	527	1 75	.....	1 39	.....	437	1 80	1 60	527	.....	527	.....	.....	.....	.....	.....	54	54
Miners, coal.....	782	783	2 74	.....	2 41	.....	645	2 93	2 58	782	.....	782	.....	1	.....	.....	.....	60	60
Miners, coal.....	1,030	1,030	2 44	.....	2 44	.....	856	2 60	2 60	1,030	.....	1,030	.....	.....	.....	.....	.....	60	60
Miners, coal.....	48	48	1 02	.....	1 45	.....	41	1 02	1 52	48	.....	48	.....	.....	.....	.....	.....	72	72
Miners, coal.....	806	806	2 01	.....	2 21	.....	678	2 13	2 37	806	.....	806	.....	.....	.....	.....	.....	54	54
Miners, coal.....	527	519	1 58	.....	1 83	.....	437	1 60	1 90	527	.....	527	.....	.....	.....	.....	.....	54	54
Miners, coal.....	122	132	1 56	.....	1 65	.....	60	2 00	2 20	132	.....	132	.....	.....	.....	.....	.....	60	60
Miners, coal.....	125	110	2 00	.....	2 00	.....	125	2 00	2 00	125	.....	125	.....	15	.....	.....	.....	60	60
Miners, coal.....	85	85	1 71	.....	1 60	.....	54	2 00	1 82	85	.....	85	.....	.....	.....	.....	.....	60	60
Printing and Publishing.																			
Compositors.....	90	90	2 45	.....	2 45	.....	55	2 75	2 75	55	.....	55	.....	55	.....	.....	.....	72	72
Compositors.....	95	95	2 50	.....	2 76	.....	58	2 50	2 92	58	.....	58	.....	40	.....	.....	.....	66	66
Rope and Bagging.																			
Hand-spinners, rope factory.....	355	355	1 45	.....	1 55	.....	145	1 50	1 75	355	.....	355	.....	.....	.....	.....	.....	60	60
Ship-building, etc.																			
Caulkers.....	45	45	2 50	.....	2 69	.....	37	2 50	2 00	45	.....	45	.....	.....	.....	.....	.....	60	48
Stone Quarrying and Cutting.																			
Laborers, quarry.....	15	15	1 25	.....	1 45	.....	12	1 25	1 50	15	.....	15	.....	.....	.....	.....	.....	60	60
Stonecutters.....	64	88	2 53	.....	2 60	.....	24	3 00	3 25	24	.....	24	.....	29	.....	.....	.....	60	60
Tobacco.																			
Cigarmakers.....	70	62	1 60	.....	\$1 03	.....	60	1 68	1 92	70	.....	18	.....	.....	.....	.....	.....	60	60
Cigarmakers.....	19	19	1 08	.....	1 28	.....	15	1 27	1 52	19	.....	19	.....	.....	.....	.....	.....	60	60
Cigarmakers.....	23	23	1 01	.....	1 24	.....	18	1 27	1 52	23	.....	23	.....	.....	.....	.....	.....	60	60
Cigarmakers.....	19	19	1 60	.....	1 80	.....	19	1 60	1 80	19	.....	19	.....	.....	.....	.....	.....	56	56
Transportation.																			
Conductors, drivers and hostlers, street railway.....	700	700	1 66	.....	1 88	.....	450	1 59	2 16	700	.....	700	.....	.....	.....	.....	.....	85	85
1882—Boots and Shoes.																			
Lasters.....	1,087	909	1 51	.....	74	.....	218	2 16	2 38	1,087	.....	909	.....	.....	.....	.....	.....	60	60
Lasters.....	70	70	1 71	.....	1 71	.....	25	2 16	2 16	70	.....	70	.....	.....	.....	.....	.....	60	60
Building Trades.																			
Plasterers.....	172	182	2 90	.....	3 20	.....	135	3 00	3 50	172	.....	172	.....	14	.....	.....	.....	60	60
Plasterers.....	8	10	2 88	.....	3 26	.....	6	3 00	3 50	8	.....	8	.....	2	.....	.....	.....	60	60
Plasterers.....	40	18	2 90	.....	3 33	.....	32	3 00	3 50	40	.....	40	.....	15	.....	.....	.....	60	60
Plasterers.....	7	7	2 86	.....	3 22	.....	5	3 00	3 50	7	.....	7	.....	.....	.....	.....	.....	60	60
Carpenters.....	210	210	2 50	.....	2 50	.....	107	2 50	2 50	107	.....	107	.....	20	.....	.....	.....	60	60
Roofers, tin.....	164	164	1 88	.....	1 88	.....	128	2 00	2 00	128	.....	128	.....	2	.....	.....	.....	59	59
Carpenters.....	160	160	2 25	.....	2 25	.....	70	2 35	2 35	110	.....	110	.....	4	.....	.....	.....	60	60
Carpenters.....	60	60	2 10	.....	2 10	.....	20	2 10	2 10	60	.....	60	.....	.....	.....	.....	.....	60	60

(b) With the reduction of wages there was also a reduction of hours from 10 to 8 per day.

STRIKES, BY YEARS AND INDUSTRIES—Continued.

Industries and years.	Number of employees.				Average daily wages.				Employees striking.			Employees striking and involved.			New employees after strike.			Brought from other places.	Weekly working hours.	
	Before strike.		After strike.		Before strike.		After strike.		Number.	Daily pay.		Male.	Female.	Total.	Male.	Female.	Total.			
	Male.	Female.	Total.	Male.	Female.	Male.	Female.	Male.	Female.	Before.	After.	Male.	Female.	Total.	Male.	Female.	Total.			
1882.																				
Cooperage.																				
Employees	65	.....	65	65	.....	65	\$1 30	.....	65	\$1 30	\$1 56	65	.....	65	.....	.....	.....	60	60
Leather and Leather Goods.																				
Horse-collar makers	120	.....	120	120	.....	120	1 70	.....	20	2 00	2 00	55	.....	55	.....	.....	.....	60	60
Machinery.																				
Employees, safe and lock works..	390	.....	390	390	.....	390	2 06	.....	220	2 70	2 70	300	.....	300	.....	.....	.....	60	60
Boiler makers	40	.....	40	40	.....	40	2 20	.....	30	2 25	2 47	30	.....	30	.....	.....	.....	60	60
Boiler makers	30	.....	30	30	.....	30	2 10	.....	24	2 25	2 47	30	.....	30	.....	.....	.....	60	60
Boiler makers.....	50	.....	50	50	.....	50	2 20	.....	42	2 25	2 47	50	.....	50	.....	.....	.....	60	60
Moulders, machine-shop	91	.....	91	82	.....	82	1 94	.....	19	2 50	2 50	19	.....	19	9	.....	9	60	60
Metals and Metallic Goods.																				
Employees, rolling-mill.....	90	.....	90	90	.....	90	2 00	.....	13	4 50	4 50	34	.....	34	.....	.....	.....	60	60
Moulders, stove foundry	218	.....	218	245	.....	245	1 53	.....	60	2 75	2 75	60	.....	60	80	.....	80	60	60
Employees, rolling-mill	5,000	.....	5,000	5,000	.....	5,000	2 20	.....	1,200	1 92	1 92	5 000	.....	5,000	1,000	.....	1,000	56	56
Moulders, stove foundry	44	.....	44	60	.....	60	2 50	.....	81	2 50	2 00	44	.....	44	60	.....	60	60	60
Employees, rolling-mill.....	583	.....	583	583	.....	583	2 30	.....	553	2 30	2 20	583	.....	583	.....	.....	.....	72	72
Paddlers, iron works	550	.....	550	550	.....	550	2 50	.....	530	2 50	2 50	550	.....	550	.....	.....	.....	60	60
Paddlers, iron works	120	.....	120	120	.....	120	2 75	.....	95	3 86	4 25	120	.....	120	.....	.....	.....	72	72
Boilers, rollers, etc., iron works	2,920	.....	2,920	2,905	.....	2,905	2 10	.....	2,800	2 10	2 10	2,885	.....	2,885	40	.....	40	57	57
Boilers, rollers, etc., iron works.	220	.....	220	220	.....	220	2 65	.....	220	2 65	2 65	220	.....	220	.....	.....	.....	60	60
Moulders, stove foundry	35	.....	35	35	.....	35	2 35	.....	17	2 75	2 75	17	.....	17	7	.....	7	60	60
Mining.																				
Miners, coal	230	.....	230	230	.....	230	2 07	.....	200	2 19	1 89	230	.....	230	8	.....	8	54	54
Miners, coal.....	70	.....	70	70	.....	70	1 74	.....	55	1 81	1 53	70	.....	70	.....	.....	.....	54	54
Miners, coal.....	140	.....	140	140	.....	140	1 74	.....	110	1 80	1 58	140	.....	140	.....	.....	.....	54	54
Miners, coal	516	.....	516	516	.....	516	1 77	.....	425	1 80	1 53	516	.....	516	.....	.....	.....	54	54
Miners, coal.....	125	.....	125	125	.....	125	1 52	.....	95	1 52	1 35	125	.....	125	.....	.....	.....	60	60
Miners, coal.....	160	.....	160	160	.....	160	1 55	.....	140	1 57	1 35	160	.....	160	.....	.....	.....	60	60
Miners, coal	527	.....	527	522	.....	522	1 83	.....	441	1 90	1 60	527	.....	527	.....	.....	.....	54	54
Miners, coal	119	.....	119	103	.....	103	1 68	.....	64	1 82	1 82	100	.....	100	7	.....	7	60	60
Miners, coal	420	.....	420	420	.....	420	1 79	.....	360	1 82	2 04	420	.....	420	.....	.....	.....	54	54
Drivers and day hands, coal	115	.....	115	112	.....	112	1 73	.....	23	1 50	1 50	115	.....	115	5	.....	5	54	54

Drivers and day hands, coal.....	172	.....	172	.....	172	1 73	.....	1 73	.....	34	1 50	1 50	1 50	34	.....	34	.....	34	.....	34	.....	.....	.....	.....	54
Miners, coal.....	343	.....	343	.....	343	1 76	.....	1 97	.....	290	1 81	2 06	2 06	343	.....	343	.....	343	.....	343	.....	.....	.....	.....	54
Miners, coal.....	285	.....	285	.....	285	1 35	.....	1 54	.....	230	1 35	1 58	1 58	285	.....	285	.....	285	.....	285	.....	.....	.....	.....	54
Miners, coal.....	76	.....	76	.....	76	3 16	.....	3 16	.....	55	3 69	3 60	3 60	76	.....	76	.....	76	.....	76	.....	.....	.....	.....	60
Ship Building, etc.																									
Caulkers	45	.....	45	.....	45	2 09	.....	2 50	.....	37	2 00	2 50	2 50	45	.....	45	.....	45	.....	45	.....	.....	.....	.....	60
Tobacco.																									
Cigar-makers	7	.....	7	.....	7	1 08	.....	1 37	.....	4	1 50	2 00	2 00	4	.....	4	.....	4	.....	4	.....	.....	.....	.....	60
Cigar-makers.....	6	.....	6	.....	6	1 05	.....	1 38	.....	4	1 50	2 01	2 01	6	.....	6	.....	6	.....	6	.....	.....	.....	.....	55
Cigar-makers.....	5	.....	5	.....	5	1 12	.....	1 32	.....	4	1 50	2 00	2 00	4	.....	4	.....	4	.....	4	.....	.....	.....	.....	55
Cigar-makers.....	4	.....	4	.....	4	1 00	.....	1 13	.....	1	1 75	2 25	2 25	1	.....	1	.....	1	.....	1	.....	.....	.....	.....	55
Cigar-makers.....	13	.....	13	.....	13	1 38	.....	1 38	.....	6	1 56	1 50	1 50	6	.....	6	.....	6	.....	6	.....	.....	.....	.....	56
Cigar-makers.....	31	.....	31	.....	31	1 80	.....	1 90	.....	31	1 80	1 90	1 90	31	.....	31	.....	31	.....	31	.....	.....	.....	.....	54
Cigar-makers.....	103	.....	103	.....	103	2 09	.....	2 00	.....	150	2 00	2 25	2 25	103	.....	103	.....	103	.....	103	.....	.....	.....	.....	56
Cigar-makers.....	22	.....	22	.....	22	83	.....	93	.....	14	1 09	1 25	1 25	22	.....	22	.....	22	.....	22	.....	.....	.....	.....	55
Cigar-makers.....	15	.....	15	.....	15	1 56	.....	1 70	.....	11	2 00	2 18	2 18	11	.....	11	.....	11	.....	11	.....	.....	.....	.....	57
Cigar-makers.....	7	.....	7	.....	7	1 70	.....	1 90	.....	5	2 00	2 00	2 00	5	.....	5	.....	5	.....	5	.....	.....	.....	.....	57
Cigar-makers.....	3	.....	3	.....	3	1 33	.....	1 40	.....	2	1 75	1 85	1 85	2	.....	2	.....	2	.....	2	.....	.....	.....	.....	57
Cigar-makers.....	22	.....	22	.....	22	1 36	.....	1 36	.....	19	1 50	1 50	1 50	22	.....	22	.....	22	.....	22	.....	.....	.....	.....	56
Cigar-makers.....	38	.....	38	.....	38	1 84	.....	1 84	.....	4	2 00	2 00	2 00	4	.....	4	.....	4	.....	4	.....	.....	.....	.....	56
1883.																									
Carriages and Wagons.																									
Wheel finishers.....	240	.....	240	.....	240	1 39	.....	1 41	.....	22	2 16	2 38	2 38	240	.....	240	.....	240	.....	240	.....	.....	.....	.....	66
Clothing.																									
Cloak-makers	12	150	162	150	162	1 33	91	1 46	1 00	162	94	1 03	1 03	12	150	162	150	162	.....	.....	.....	.....	.....	.....	60
Food Preparations.																									
Millers	6	.....	6	.....	6	1 81	.....	1 81	.....	2	1 53	1 53	1 53	6	.....	6	.....	6	.....	6	.....	.....	.....	.....	66
Glass.																									
Employees, roofing glass works...	38	.....	38	.....	38	2 88	.....	2 88	.....	4	2 00	2 00	2 00	38	.....	38	.....	38	.....	38	.....	.....	.....	.....	60
Employees, window glass works..	307	.....	307	.....	307	3 18	.....	3 18	.....	147	4 87	4 87	4 87	307	.....	307	.....	307	.....	307	.....	.....	.....	.....	54
Employees, bottle glass works....	68	.....	68	.....	68	1 73	.....	1 73	.....	16	3 88	3 88	3 88	68	.....	68	.....	68	.....	68	.....	.....	.....	.....	51
Leather and Leather Goods.																									
Harness-makers.. ..	70	.....	70	.....	70	1 84	.....	2 02	.....	48	1 92	2 11	2 11	48	.....	48	.....	48	.....	48	.....	.....	.....	.....	59
Harness-makers.....	115	.....	115	.....	115	1 84	.....	2 02	.....	73	1 92	2 11	2 11	73	.....	73	.....	73	.....	73	.....	.....	.....	.....	59
Metals and Metallic Goods.																									
Moulders, stove foundry	30	.....	30	.....	30	2 00	.....	1 50	.....	18	2 55	1 50	1 50	18	.....	18	.....	18	.....	18	.....	.....	.....	.....	60
Moulders, stove foundry	180	.....	180	.....	180	1 62	.....	1 56	.....	36	2 87	2 58	2 58	180	.....	180	.....	180	.....	180	.....	.....	.....	.....	60
Bolt-makers, iron works.	115	.....	115	.....	115	1 10	.....	1 06	.....	12	2 11	1 69	1 69	40	.....	40	.....	40	.....	40	.....	.....	.....	.....	60
Moulders, stove foundry	155	.....	155	.....	155	2 26	.....	2 26	.....	65	2 75	2 75	2 75	65	.....	65	.....	65	.....	65	.....	.....	.....	.....	60
Puddlers, iron works	165	.....	165	.....	165	2 07	.....	2 07	.....	68	3 25	3 25	3 25	165	.....	165	.....	165	.....	165	.....	.....	.....	.....	57
Moulders, hardware factory.	260	.....	260	.....	260	1 51	.....	1 51	.....	55	2 25	2 25	2 25	110	.....	110	.....	110	.....	110	.....	.....	.....	.....	60
Boilers, rollers, etc., iron works..	250	.....	250	.....	250	2 00	.....	2 00	.....	32	6 91	6 91	6 91	250	.....	250	.....	250	.....	250	.....	.....	.....	.....	60
Boilers and helpers, iron works..	240	.....	240	.....	240	1 82	.....	1 82	.....	59	7 00	7 00	7 00	240	.....	240	.....	240	.....	240	.....	.....	.....	.....	60
Boilers and helpers, iron works..	270	.....	270	.....	270	2 10	.....	2 10	.....	72	1 92	1 92	1 92	270	.....	270	.....	270	.....	270	.....	.....	.....	.....	57

STRIKES, BY YEARS AND INDUSTRIES—Continued.

Industries and years.	Number of employees.				Average daily wages.				Employees striking.			Employees striking and involved.			New employees after strike.			Brought from other places.		Weekly working hours.	
	Before strike.		After strike.		Before strike.		After strike.		Number.	Daily pay.		Male.	Female.	Total.	Male.	Female.	Total.	Brought from other places.	Before strike.	After strike.	hours.
	Male	Female	Male	Female	Male	Female	Male	Female		Before.	After.										
1883.																					
Horse-shoers	68	.....	68	.....	\$2 75	.....	\$3 00	.....	68	\$2 75	\$3 00	68	.....	68	.....	.....	.....	.....	.....	60	60
Top-fillers, iron furnace.....	110	.....	108	.....	1 82	.....	1 82	.....	6	1 65	1 70	110	.....	110	.....	.....	.....	.....	.....	60	60
Horse-shoers	11	.....	11	.....	2 00	.....	2 75	.....	11	2 00	2 75	11	.....	11	11	.....	.....	4	.....	60	60
Employees, chain works.....	28	.....	16	.....	1 67	.....	1 50	.....	28	1 67	1 50	28	.....	28	12	.....	.....	.....	.....	60	60
Moulders, stove foundry.....	27	.....	27	.....	2 62	.....	2 62	.....	17	3 00	3 00	27	.....	27	.....	.....	.....	.....	.....	60	60
<i>Metals and Metallic Goods.</i>																					
Moulders, iron foundry.....	212	.....	212	.....	1 73	.....	1 73	.....	63	2 50	2 50	63	.....	63	59	.....	.....	52	.....	60	60
Tinners, tinware factory.....	85	.....	85	.....	1 25	.....	1 25	.....	28	2 10	2 10	28	.....	28	28	.....	.....	28	.....	60	60
<i>Mining.</i>																					
Miners, coal.....	34	.....	34	.....	2 09	.....	1 88	.....	27	2 25	2 00	34	.....	34	.....	.....	.....	.....	.....	72	72
Miners, coal.....	548	.....	548	.....	1 59	.....	1 53	.....	449	1 60	1 53	548	.....	548	.....	.....	.....	.....	.....	54	54
Miners, coal.....	445	.....	445	.....	1 92	.....	1 72	.....	380	2 13	1 89	445	.....	445	.....	.....	.....	.....	.....	54	54
Miners, coal.....	106	.....	106	.....	1 93	.....	1 75	.....	94	2 60	1 80	106	.....	106	.....	.....	.....	.....	.....	60	60
Miners and laborers, coal.....	1,132	.....	1,132	.....	2 16	.....	2 13	.....	105	2 05	1 75	1,132	.....	1,132	.....	.....	.....	.....	.....	54	60
Miners and laborers, coal.....	1,563	.....	1,563	.....	2 16	.....	2 13	.....	148	2 05	1 75	1,563	.....	1,563	.....	.....	.....	.....	.....	54	60
Miners and laborers, coal.....	755	.....	755	.....	2 17	.....	2 14	.....	71	2 05	1 75	755	.....	755	.....	.....	.....	.....	.....	54	60
Drivers and day hands, coal.....	419	.....	419	.....	1 75	.....	1 74	.....	59	1 49	1 40	419	.....	419	.....	.....	.....	.....	.....	54	54
Miners, coal.....	65	.....	38	.....	2 10	.....	2 10	.....	44	2 70	2 70	65	.....	65	12	.....	.....	12	.....	55	55
Miners, coal.....	82	.....	51	.....	1 74	.....	1 74	.....	60	3 06	3 06	82	.....	82	14	.....	.....	14	.....	45	45
Miners, coal.....	94	.....	85	.....	1 55	.....	1 56	.....	80	1 60	1 60	94	.....	94	.....	.....	.....	.....	.....	60	60
Miners, coal.....	134	.....	67	.....	1 77	.....	1 54	.....	63	2 20	2 00	134	.....	134	6	.....	.....	6	.....	60	60
Miners, coal.....	490	.....	490	.....	1 69	.....	1 92	.....	415	1 78	2 06	490	.....	490	.....	.....	.....	.....	.....	54	54
Miners, coal.....	1,084	.....	1,084	.....	1 87	.....	2 05	.....	919	1 94	2 16	1,084	.....	1,084	.....	.....	.....	.....	.....	60	60
Miners, coal.....	567	.....	567	.....	2 00	.....	2 22	.....	475	2 13	2 39	567	.....	567	.....	.....	.....	.....	.....	54	54
Miners, coal.....	106	.....	92	.....	1 81	.....	1 81	.....	94	1 90	1 90	106	.....	106	18	.....	.....	.....	.....	60	60
Miners, coal.....	86	.....	134	.....	1 47	.....	1 50	.....	58	1 97	2 00	86	.....	86	48	.....	.....	48	.....	54	54
<i>Pottery, Earthenware, etc.</i>																					
Apprentices, pottery works.....	80	30	80	30	1 85	\$0 75	1 85	\$0 75	15	1 00	1 00	15	.....	15	.....	.....	.....	.....	.....	60	60
<i>Printing and Publishing.</i>																					
Compositors	16	3	8	3	2 40	1 25	2 40	1 25	12	2 40	2 40	12	.....	12	4	.....	.....	.....	.....	72	72
Compositors.....	10	.....	10	.....	3 40	.....	3 40	.....	7	4 00	4 00	10	.....	10	.....	.....	.....	.....	.....	60	60

<i>Stone Quarrying and Culling.</i>														
Stone cutters	59	59	60	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	60
Quarrymen	113	113	113	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	60
Telegraphy. (Strike of July 19, see New York)														
<i>Tobacco.</i>														
Cigarmakers	28	30	28	2	30	1 62	\$ 75	1 62	\$ 75	.....	.....	.....	.....	56
Cigarmakers	22	22	22	.....	22	98	.....	98	.....	.....	.....	.....	.....	55
Cigarmakers	5	5	5	.....	5	1 58	.....	1 58	.....	.....	.....	.....	.....	55
Cigarmakers	9	11	5	2	7	1 50	1 00	1 50	1 00	.....	.....	.....	.....	56
Cigarmakers	592	917	592	325	917	1 73	1 43	1 73	1 43	.....	.....	.....	.....	56
Cigarmakers	45	45	45	.....	45	1 75	.....	1 75	.....	.....	.....	.....	.....	56
Cigarmakers	10	10	10	.....	10	1 71	.....	1 71	.....	.....	.....	.....	.....	54
Cigarmakers	110	110	110	.....	110	2 88	.....	2 88	.....	.....	.....	.....	.....	54
Cigarmakers	2	2	2	.....	2	1 35	.....	1 35	.....	.....	.....	.....	.....	56
Cigarmakers	38	14	6	8	14	1 25	1 25	1 25	1 25	.....	.....	.....	.....	60
Cigarmakers	12	12	14	.....	14	1 10	.....	1 10	.....	.....	.....	.....	.....	56
Cigarmakers	54	54	18	.....	18	1 56	.....	1 56	.....	.....	.....	.....	.....	60
Cigarmakers	16	16	16	.....	16	1 27	.....	1 27	.....	.....	.....	.....	.....	56
Cigarmakers	29	29	21	.....	25	1 51	.....	1 51	.....	.....	.....	.....	.....	60
Cigarmakers	15	15	22	.....	22	1 30	.....	1 30	.....	.....	.....	.....	.....	60
Cigarmakers	33	39	25	6	31	1 90	60	2 00	60	.....	.....	.....	.....	54
Cigarmakers	24	32	24	8	32	1 28	65	1 28	65	.....	.....	.....	.....	60
Cigarmakers	18	30	18	12	30	1 75	58	1 90	58	.....	.....	.....	.....	60
Cigarmakers	17	20	14	3	17	1 18	33	1 18	33	.....	.....	.....	.....	60
Cigarmakers	44	50	44	6	50	1 59	50	1 73	50	.....	.....	.....	.....	55
Cigarmakers	22	22	22	.....	22	98	.....	1 09	.....	.....	.....	.....	.....	55
Cigarmakers	8	8	8	.....	8	1 06	.....	1 19	.....	.....	.....	.....	.....	55
Cigarmakers	7	9	6	2	8	1 49	50	1 49	50	.....	.....	.....	.....	55
Cigarmakers	13	13	12	.....	12	1 92	.....	1 92	.....	.....	.....	.....	.....	56
Cigarmakers	52	127	36	75	111	1 73	98	1 73	98	.....	.....	.....	.....	56
Cigarmakers	16	18	14	2	16	1 56	50	1 28	50	.....	.....	.....	.....	60
<i>Miscellaneous.</i>														
Silvergilders, pict're frame fact'y	510	537	500	27	527	1 72	1 03	1 72	1 03	.....	.....	.....	.....	60
<i>1884.</i>														
<i>Agricultural Implements.</i>														
Moulders, boiler-makers and machinists, mower and reaper works	600	600	600	.....	600	2 00	.....	2 00	.....	.....	.....	.....	.....	60
<i>Carriages and Wagons.</i>														
Trimmers	400	420	380	20	400	1 60	75	1 60	75	.....	.....	.....	.....	60
Spring-makers and helpers	60	60	60	.....	60	1 52	.....	1 52	.....	.....	.....	.....	.....	60
Spring-makers	60	60	60	.....	60	1 52	.....	1 52	.....	.....	.....	.....	.....	60
<i>Furniture.</i>														
Employees, saloon fixtures fact'y	95	95	95	.....	95	1 85	.....	1 85	.....	.....	.....	.....	.....	60
<i>Glass.</i>														
Blowers, bottle glass works	68	68	68	.....	68	1 73	.....	1 73	.....	.....	.....	.....	.....	54

STRIKES, BY YEARS AND INDUSTRIES—Continued.

Industries and years.	Number of employes.				Average daily wages.				Employes striking.			Employes striking and involved.			New employes after strike.			Brought from other places	Weekly working hours.		
	Before strike.		After strike.		Before strike.		After strike.		Number.	Daily pay.		Male.	Female.	Total.	Male.	Female.	Total.		Male.	Female.	
	Male.	Female.	Total.	Male.	Female.	Total.	Before.	After.													
1881.																					
Employes, flint glass works.....	199	20	219	175	20	195	\$1 08	\$ 80	45	\$3 00	\$3 00	199	20	219	.....	.....	.....	.....	.....	55	55
Employes, flint glass works.....	270	35	305	270	35	305	1 45	64	68	3 44	3 44	270	35	305	.....	.....	.....	.....	.....	60	60
Employes, flint glass works.....	575	70	645	575	70	645	1 92	65	189	3 04	4 04	575	70	645	.....	.....	.....	.....	.....	60	60
Employes, flint glass works.....	223	31	254	125	15	140	1 09	60	97	2 40	2 40	223	31	254	.....	.....	.....	.....	.....	60	60
<i>Machines and Machinery.</i>																					
Machinists and helpers, railroad machine shops.....	150	.....	150	49	.....	49	1 65	.....	145	1 73	1 73	145	.....	145	.....	.....	.....	.....	.....	60	60
<i>Metals and Metallic Goods.</i>																					
Moulders, stove foundry.....	96	.....	96	96	.....	96	1 93	.....	48	3 07	3 00	96	.....	96	.....	.....	.....	.....	.....	60	60
Moulders, stove foundry.....	90	.....	90	90	.....	90	2 25	.....	45	2 50	2 50	90	.....	90	.....	.....	.....	.....	.....	60	60
Moulders, stove foundry.....	150	.....	150	150	.....	150	2 25	.....	75	3 00	2 25	150	.....	150	.....	.....	.....	.....	.....	60	60
Moulders, stove foundry.....	140	.....	140	100	.....	100	2 20	.....	75	3 00	2 25	140	.....	140	.....	.....	.....	.....	.....	60	60
Moulders, stove foundry.....	23	.....	23	23	.....	23	2 68	.....	15	3 00	3 00	18	.....	18	.....	.....	.....	.....	.....	60	60
Moulders, stove foundry.....	225	.....	225	140	.....	140	2 09	.....	95	2 75	2 60	225	.....	225	.....	.....	.....	.....	.....	60	60
Employes, rolling-mill.....	50	.....	50	50	.....	50	3 20	.....	50	3 20	2 82	50	.....	50	.....	.....	.....	.....	.....	60	60
Moulders, stove foundry.....	90	.....	90	106	.....	106	1 90	.....	48	3 00	2 59	90	.....	90	.....	.....	.....	.....	.....	60	60
Heaters, puddlers, etc., iron works.....	550	.....	550	550	.....	550	2 50	.....	275	6 50	6 50	550	.....	550	.....	.....	.....	.....	.....	60	60
Employes, iron works.....	90	.....	90	90	.....	90	2 18	.....	90	2 18	2 18	90	.....	90	.....	.....	.....	.....	.....	57	57
<i>Mining.</i>																					
Miners, coal.....	90	.....	90	115	.....	115	1 98	.....	70	2 19	1 89	90	.....	90	.....	.....	.....	.....	.....	54	54
Miners, coal.....	260	.....	260	180	.....	180	2 05	.....	240	1 95	1 63	260	.....	260	.....	.....	.....	.....	.....	54	54
Miners, coal.....	80	.....	80	a	.....	a	2 01	.....	65	2 19	a	80	.....	80	.....	.....	.....	.....	.....	54	54
Haulers, coal.....	1,495	.....	1,495	1,495	.....	1,495	2 09	.....	132	2 05	1 75	1,412	.....	1,412	.....	.....	.....	.....	.....	60	60
Miners, coal.....	43	.....	43	43	.....	43	2 60	.....	32	2 25	2 25	43	.....	43	.....	.....	.....	.....	.....	60	60
Miners, coal.....	237	.....	237	257	.....	257	1 84	.....	215	1 90	1 75	237	.....	237	.....	.....	.....	.....	.....	60	60
Miners, coal.....	2,682	.....	2,682	2,682	.....	2,682	2 14	.....	2,289	2 23	1 18	2,289	.....	2,289	.....	.....	.....	.....	.....	60	60
Miners, coal.....	1,100	.....	1,100	1,100	.....	1,100	2 14	.....	945	2 23	1 18	945	.....	945	.....	.....	.....	.....	.....	60	60
Miners, coal.....	48	.....	48	40	.....	40	2 17	.....	38	2 85	2 85	48	.....	48	.....	.....	.....	.....	.....	60	60
Miners, coal.....	245	.....	245	90	.....	90	1 80	.....	210	2 05	2 05	245	.....	245	.....	.....	.....	.....	.....	54	54
Miners, coal.....	40	.....	40	40	.....	40	2 10	.....	22	2 70	2 70	40	.....	40	.....	.....	.....	.....	.....	60	60
Miners, coal.....	2,350	.....	2,350	2,350	.....	2,350	2 09	.....	2,005	2 17	2 17	2,005	.....	2,005	.....	.....	.....	.....	.....	55	55
Miners, coal.....	140	.....	140	137	.....	137	1 90	.....	123	1 94	1 71	137	.....	137	.....	.....	.....	.....	.....	60	60
Miners, coal.....	110	110	100	100	1 47	96	1 50	1 30	110	110	54	54

Pottery, Earthenware, etc.	336	6	342	336	6	342
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(a) Mine was closed permanently in consequence of strike.

(b) Entire number for whole strike, 425.

STRIKES, BY YEARS AND INDUSTRIES—Continued.

Industries and years.	Number of employees.				Average daily wages.				Employees striking.			Employees striking and involved.			New employees after strike.			Brought from other places.		Weekly working hours.	
	Before strike.		After strike.		Before strike.		After strike.		Number.	Daily pay.		Male.	Female.	Total.	Male.	Female.	Total.	Brought from other places.	Before strike.	After strike.	
	Male.	Female.	Total.	Total.	Male.	Female.	Before.	After.													
1885.																					
Employees, iron works.....	1,500	.....	1,500	1,500	\$2 00	.....	\$2 00	.....	550	\$3 81	\$3 81	1,500	.....	1,500	.....	.....	.....	.....	57	57
Employees, iron works.....	90	.....	90	90	2 10	.....	2 10	.....	40	4 44	4 44	90	.....	90	.....	.....	.....	.....	57	57
Employees, iron works.....	170	.....	170	170	2 18	.....	2 18	.....	98	3 29	3 29	170	.....	170	.....	.....	.....	.....	57	57
Employees, iron works.....	300	.....	300	300	2 18	.....	2 18	.....	48	4 90	4 90	300	.....	300	.....	.....	.....	.....	57	57
Employees, iron works.....	390	.....	294	.....	1 82	.....	1 70	.....	32	7 06	5 65	390	.....	390	48	48	60	60	60	60
Employees, iron works.....	685	.....	585	.....	1 82	.....	1 70	.....	45	7 17	5 87	685	.....	685	70	70	10	10	60	60
Employees, iron works.....	250	.....	250	.....	2 18	.....	2 09	.....	16	8 61	7 50	250	.....	250	.....	.....	.....	.....	57	57
Employees, nail works.....	114	.....	114	.....	2 64	.....	2 37	.....	14	8 61	7 50	114	.....	114	.....	.....	.....	.....	57	57
Employees, rolling-mill.....	3,000	.....	3,000	.....	2 00	.....	2 00	.....	3,000	2 00	2 00	3,000	.....	3,000	400	400	.....	.....	52	52
Employees, bolt works.....	143	.....	151	.....	1 03	.....	93	.....	143	1 03	93	143	.....	143	38	38	.....	.....	60	60
Employ's, chain w rks.....	67	.....	64	.....	1 75	.....	1 75	.....	3	2 10	2 10	55	.....	55	6	6	.....	.....	59	59
Moulders, stove foundry.....	26	.....	26	.....	2 61	.....	2 61	.....	16	3 00	3 00	26	.....	26	.....	.....	.....	.....	60	60
Mining.																					
Miners, coal.....	955	.....	955	.....	1 79	.....	1 60	.....	777	1 85	1 61	955	.....	955	.....	.....	.....	.....	60	60
Miners, coal.....	271	.....	271	.....	1 79	.....	1 60	.....	219	1 85	1 61	271	.....	271	.....	.....	.....	.....	60	60
Miners, coal.....	1,105	.....	1,105	.....	1 78	.....	1 23	.....	1,105	1 78	1 23	1,105	.....	1,105	.....	.....	.....	.....	54	54
Miners, coal.....	130	.....	130	.....	1 81	.....	1 28	.....	130	1 81	1 28	130	.....	130	.....	.....	.....	.....	54	54
Miners, coal.....	347	.....	347	.....	1 96	.....	1 77	.....	266	2 13	1 88	347	.....	347	.....	.....	.....	.....	54	54
Miners, coal.....	32	.....	32	.....	1 71	.....	1 21	.....	32	1 71	1 21	32	.....	32	.....	.....	.....	.....	54	54
Miners, coal.....	299	.....	230	.....	1 57	.....	1 25	.....	245	1 58	1 20	299	.....	299	25	25	.....	.....	54	54
Miners, coal.....	75	.....	75	.....	1 65	.....	1 39	.....	65	1 99	1 69	75	.....	75	.....	.....	.....	.....	54	54
Miners, coal.....	65	.....	65	.....	1 60	.....	1 42	.....	58	1 70	1 50	65	.....	65	.....	.....	.....	.....	54	54
Miners, coal.....	900	.....	590	.....	1 56	.....	1 26	.....	515	1 58	1 20	900	.....	900	30	30	.....	.....	54	54
Miners, coal.....	38	.....	25	.....	1 75	.....	1 45	.....	30	1 75	1 45	38	.....	38	.....	.....	.....	.....	60	60
Miners, coal.....	195	.....	195	.....	1 80	.....	1 50	.....	175	1 80	1 50	195	.....	195	4	4	.....	.....	48	48
Miners, coal.....	160	.....	160	.....	1 46	.....	1 46	.....	140	1 48	1 48	160	.....	160	.....	.....	.....	.....	60	60
Miners, coal and iron ore.....	125	.....	125	.....	1 43	.....	1 45	.....	95	1 46	1 48	125	.....	125	.....	.....	.....	.....	60	60
Miners, coal.....	1,190	.....	1,190	.....	1 46	.....	1 16	.....	1,025	1 47	1 12	1,190	.....	1,190	.....	.....	.....	.....	60	60
Miners, coal.....	87	.....	78	.....	1 55	.....	1 52	.....	43	2 00	1 85	87	.....	87	.....	.....	.....	.....	60	60
Miners, coal.....	80	.....	38	.....	1 68	.....	1 62	.....	65	1 78	1 71	80	.....	80	20	20	.....	.....	54	54
Miners, coal.....	271	.....	271	.....	1 60	.....	1 46	.....	219	1 73	1 56	271	.....	271	.....	.....	.....	.....	60	60
Miners, coal.....	970	.....	970	.....	1 68	.....	1 54	.....	782	1 73	1 56	970	.....	970	.....	.....	.....	.....	60	60
Miners, coal.....	4,304	.....	4,304	.....	1 25	.....	1 51	.....	3,620	1 18	1 53	4,304	.....	4,304	.....	.....	.....	.....	60	60
Miners, coal.....	497	.....	497	.....	1 57	.....	1 57	.....	409	1 59	1 59	497	.....	497	.....	.....	.....	.....	54	54
Miners, coal.....	64	.....	64	.....	2 00	.....	2 00	.....	60	1 92	1 92	60	.....	60	.....	.....	.....	.....	54	54
Miners, coal.....	245	.....	245	.....	1 54	.....	1 54	.....	200	1 56	1 56	245	.....	245	.....	.....	.....	.....	60	60

Miners, coal.....	195	145	\$1 48	.....	\$1 57	.....	170	\$1 50	\$1 62	195	.....	195	.....	.....	.....	.....	60
Miners, coal.....	72	72	1 25	.....	1 54	.....	60	1 18	1 53	72	.....	72	.....	.....	.....	.....	60
Miners, coal.....	265	265	1 57	.....	1 63	.....	235	1 63	1 70	265	.....	265	.....	.....	.....	.....	54
Miners, coal.....	2,431	2,431	1 54	.....	1 54	.....	1,926	1 56	1 56	2,431	.....	2,431	.....	.....	.....	.....	60
Miners, coal.....	16	11	1 83	.....	1 83	.....	12	1 90	1 90	16	.....	16	.....	5	.....	.....	54
Miners, coal.....	90	90	1 54	.....	1 54	.....	75	1 56	1 56	90	.....	90	.....	.....	.....	.....	60
Miners, coal.....	635	635	1 54	.....	1 54	.....	512	1 56	1 56	635	.....	635	.....	.....	.....	.....	60
Miners, coal.....	245	220	1 54	.....	1 54	.....	200	1 56	1 56	245	.....	245	.....	.....	.....	.....	60
Miners, coal.....	1,706	1,706	1 54	.....	1 54	.....	1,339	1 56	1 56	1,706	.....	1,706	.....	.....	.....	.....	60
Miners, coal.....	885	885	1 49	.....	1 80	.....	760	1 47	1 82	885	.....	885	.....	.....	.....	.....	60
Miners, coal.....	4,324	4,324	1 54	.....	1 83	.....	3,638	1 53	1 88	4,324	.....	4,324	.....	.....	.....	.....	60
Pottery, Earthenware, etc.																	
Clay workers and kiln men, pottery works.....	289	42	331	289	42	331	2 00	\$ 75	1 95	67	2 37	2 16	67	.....	.....	.....	54
Printing and Publishing.																	
Compositors	20	11	31	20	11	31	2 10	1 00	2 00	6	2 30	2 25	6	.....	.....	.....	59
Compositors	37	85	62	80	82	62	1 89	75	1 27	15	2 00	1 60	15	.....	.....	.....	60
Compositors	20	2	22	20	2	22	2 50	2 20	2 45	12	2 75	2 60	12	.....	.....	.....	60
Compositors	12	.....	12	12	.....	12	3 12	.....	3 12	12	3 12	3 12	12	.....	.....	.....	60
Stone-cutting and Quarrying.																	
Stone-cutters.....	325	.....	325	325	.....	325	2 56	.....	2 61	147	3 50	3 60	147	.....	.....	.....	57
Tobacco.																	
Cigar-makers.....	39	23	62	35	23	58	1 65	61	1 65	23	1 85	1 83	23	.....	.....	.....	56
Cigar-makers	22	.....	22	21	.....	21	1 90	.....	1 84	8	2 00	1 92	8	.....	.....	.....	56
Cigar-makers	4	.....	4	4	.....	4	1 42	.....	1 37	2	1 85	1 75	2	.....	.....	.....	56
Cigar-makers	3	.....	3	3	.....	3	1 60	.....	1 60	2	1 60	1 60	2	.....	.....	.....	56
Cigar-makers	4	.....	4	4	.....	4	1 14	.....	1 14	1	1 35	1 35	1	.....	.....	.....	56
Cigar-makers	95	.....	95	85	.....	95	1 68	.....	1 51	65	1 84	1 66	95	.....	.....	.....	56
Cigar-makers	105	7	112	105	7	112	1 40	60	1 33	45	2 00	1 90	45	.....	.....	.....	57
Cigar-makers	9	.....	9	7	.....	7	1 65	.....	1 65	2	1 75	.....	2	.....	.....	.....	56
Cigar-makers	12	.....	12	15	.....	15	1 55	.....	1 53	2	1 60	1 60	2	.....	.....	.....	56
Cigar-makers	20	.....	26	13	.....	19	2 00	42	1 80	20	2 00	1 80	20	.....	.....	.....	56
Cigar-makers	5	.....	6	2	.....	8	1 57	50	1 63	5	2 00	2 00	5	.....	.....	.....	66
Cigar-makers	11	.....	11	5	.....	5	1 91	.....	1 91	11	1 91	1 91	11	.....	.....	.....	57
Transportation.																	
Firemen, railroad.....	57	.....	57	57	.....	57	1 75	.....	1 60	8	1 75	1 50	8	.....	.....	.....	72
Conductors and brakeman	750	.....	750	750	.....	750	1 92	.....	1 92	150	2 00	2 06	150	.....	.....	.....	65
Drivers, street railway	5	.....	5	5	.....	5	1 10	.....	1 25	5	1 10	1 25	5	.....	.....	.....	105
Miscellaneous.																	
Packers, match factory	197	160	357	197	160	357	1 10	80	1 10	197	80	80	197	160	357	8	60
Agricultural Implements.																	
Moulders.....	290	.....	290	250	.....	250	1 95	.....	1 95	36	2 73	2 73	163	.....	163	123	57
Boots and Shoes.																	
Employees	85	70	155	85	70	155	1 65	85	1 65	180	1 34	1 34	85	70	155	.....	59

STRIKES, BY YEARS AND INDUSTRIES—Continued.

Industries and years.	Number of employees.				Average daily wages.				Employees striking.			Employees strik'g and involved.			New employees after strike.			Brought from other places.	Weekly working hours.	
	Before strike.		After strike.		Before strike.		After strike.		Number.	Daily pay.		Male.	Female.	Total.	Male.	Female.	Total.		Before strike.	After strike.
	Male.	Female.	Total.	Male.	Female.	Total.	Before.	After.												
1886.																				
Employees	42	36	78	42	36	78	\$1 79	\$ 82	78	\$1 34	\$1 34	42	36	78	.....	.....	.....	.....	60	60
Emp.oyes	33	32	65	44	45	89	1 92	91	60	1 44	91	33	32	65	.....	23	51	6	60	60
Brick.																				
Employees	91	.....	294	294	.....	294	1 52	.....	294	1 52	1 75	294	.....	294	.....	.....	.....	.....	60	60
Building Trades.																				
Bricklayers and hod-carriers	780	.....	780	780	.....	780	3 36	.....	300	2 25	2 25	780	.....	780	.....	.....	.....	.....	54	54
Carriages and Wagons.																				
Spoke lathemen	235	.....	235	235	.....	235	1 34	.....	13	1 65	1 65	13	.....	13	.....	.....	.....	.....	66	66
Employees	400	.....	400	400	.....	400	1 65	.....	200	2 00	2 20	400	.....	400	.....	.....	.....	.....	60	60
Employees	300	12	312	300	.....	312	2 37	1 00	150	2 25	2 50	300	12	312	14	.....	14	.....	60	60
Employees	405	20	425	405	.....	425	2 47	83	80	2 25	2 47	405	20	425	.....	.....	.....	.....	60	60
Employees	260	5	265	260	.....	265	2 26	1 00	34	2 51	2 78	260	5	265	.....	.....	.....	.....	60	60
Employees	300	15	315	300	.....	315	1 65	83	315	1 47	1 61	300	15	315	.....	.....	.....	.....	60	60
Employees	100	.....	100	100	.....	100	1 82	.....	100	1 65	1 82	100	.....	100	.....	.....	.....	.....	60	60
Employees	400	20	420	400	.....	420	2 20	77	180	2 25	2 50	400	20	420	.....	.....	.....	.....	60	60
Employees	49	.....	49	49	.....	49	2 20	.....	9	1 50	1 65	49	.....	49	.....	.....	.....	.....	60	60
Spring makers	66	.....	66	60	.....	60	1 89	.....	66	1 89	1 89	64	.....	64	.....	.....	27	.....	60	60
Wheel finishers	80	.....	80	80	.....	80	1 30	.....	4	2 12	2 08	4	.....	4	.....	.....	3	.....	60	60
Spoke polishers	55	.....	55	52	.....	52	1 06	.....	18	1 80	1 80	18	.....	18	.....	.....	15	.....	60	60
Cooperage.																				
Coopers	13	.....	13	13	.....	13	1 93	.....	13	1 93	1 93	13	.....	13	.....	.....	.....	.....	60	60
Coopers	16	.....	16	15	.....	15	1 63	.....	16	1 50	1 63	16	.....	16	.....	.....	.....	.....	60	60
Coopers	14	.....	14	14	.....	14	1 60	.....	14	1 47	1 60	14	.....	14	.....	.....	.....	.....	60	60
Coopers	15	.....	15	15	.....	15	1 60	.....	15	1 47	1 60	15	.....	15	.....	.....	.....	.....	60	60
Coopers	42	.....	42	42	.....	42	1 47	.....	42	1 47	1 60	42	.....	42	.....	.....	.....	.....	60	60
Coopers	30	.....	30	30	.....	30	1 47	.....	30	1 47	1 60	30	.....	30	.....	.....	.....	.....	60	60
Coopers	126	.....	126	126	.....	126	1 47	.....	124	1 47	1 60	126	.....	126	.....	.....	.....	.....	60	60
Coopers	12	.....	12	12	.....	12	1 47	.....	12	1 47	1 60	12	.....	12	.....	.....	.....	.....	60	60
Coopers	24	.....	24	24	.....	24	1 47	.....	24	1 47	1 60	24	.....	24	.....	.....	.....	.....	60	60
Coopers	26	.....	26	26	.....	26	1 47	.....	26	1 47	1 60	26	.....	26	.....	.....	.....	.....	60	60
Coopers	520	.....	520	520	.....	520	1 28	.....	353	1 28	1 19	353	.....	353	.....	.....	40	.....	60	60
Coopers, flour barrels	60	.....	60	60	.....	60	1 43	.....	60	1 43	1 56	60	.....	60	.....	.....	.....	.....	54	54

	4	24	24	24	(a) 53	(a) 53	(a) 53	19	(a) 53	(a) 53	10	19	19	19	19	68	69
Domestic Service.																	
Walters, hotel.....	6	6	6	6	1 28	1 28	1 28	3	1 50	1 50	3	3	3	3	3	77	77
Food Preparations.	27	27	27	27	1 66	1 66	1 66	27	1 66	1 66	27	27	27	27	27	87	87
Furniture.																	
Employees, billiard table, etc., factory	145	145	145	145	1 85	1 85	1 66	145	1 85	1 66	145	145	145	145	145	60	48
Employees	135	135	135	135	1 68	1 68	1 68	42	2 17	2 17	90	90	90	90	90	60	60
Cabinet-makers	90	90	90	90	1 83	1 83	1 83	84	1 87	1 87	90	90	90	90	90	60	60
Cabinet-makers	28	31	28	3	1 87	58	1 87	4	2 00	2 00	4	4	4	4	4	60	60
Cabinet-makers	75	75	75	75	1 30	1 30	1 30	5	1 50	1 50	75	75	75	75	75	60	60
Employees	125	150	10	10	1 75	60	1 80	105	1 87	1 87	125	45	25	170	170	60	60
Cabinet-makers	45	45	20	20	1 90	1 90	1 90	43	1 87	1 87	45	45	5	45	5	60	60
Cabinet-makers	574	609	574	35	1 74	1 08	1 74	450	1 87	1 87	450	450	4	450	4	60	60
Cabinet-makers	72	72	65	65	1 75	1 75	1 75	35	2 25	2 25	35	35	4	35	4	60	60
Cabinet-makers	114	114	113	113	1 61	1 61	1 57	111	1 60	1 56	114	114	9	114	9	60	60
Cabinet-makers	41	41	41	41	1 88	1 88	1 88	40	1 87	1 87	40	40	40	40	40	60	60
Cabinet-makers	87	87	85	85	1 82	1 82	1 59	67	2 00	1 70	87	87	4	87	4	60	48
Cabinet-makers	21	21	23	23	1 62	1 62	1 62	11	1 85	1 85	11	11	4	11	4	60	60
Cabinet-makers	109	109	104	104	1 59	1 59	1 59	104	1 60	1 60	109	109	4	109	4	60	60
Cabinet-makers	70	70	32	32	1 67	1 67	1 75	67	1 68	1 68	67	67	6	67	6	60	60
Cabinet-makers	32	32	32	32	1 75	1 75	1 67	31	1 75	1 67	31	31	31	31	31	60	48
Cabinet-makers	20	20	20	20	1 67	1 67	1 65	20	1 67	1 65	20	20	20	20	20	60	60
Cabinet-makers	65	65	65	65	1 75	1 75	1 75	45	1 87	1 87	45	45	45	45	45	60	60
Cabinet-makers	200	200	175	175	1 47	1 47	1 65	190	1 50	1 75	190	190	10	190	10	60	60
Cabinet-makers	75	75	71	71	1 66	1 66	1 66	74	1 66	1 66	74	74	74	74	74	60	60
Cabinet-makers	93	93	82	82	1 77	1 77	1 77	90	1 77	1 77	90	90	22	90	22	60	60
Cabinet-makers	80	80	83	83	1 50	1 50	1 48	50	1 75	1 75	50	50	3	50	3	60	60
Cabinet-makers	195	2 0	195	15	1 73	50	50	185	1 75	1 75	185	195	5	195	5	60	60
Cabinet-makers	21	21	26	26	1 88	1 88	1 88	20	1 87	1 87	20	20	20	20	20	60	60
Cabinet-makers	63	63	52	52	1 91	1 91	1 67	60	1 90	1 66	60	60	60	60	60	60	60
Employees, saloon fixtures factory	32	32	32	32	1 73	1 73	1 73	6	1 80	1 80	26	25	13	25	13	48	51
Cabinet-makers	45	45	45	45	1 51	1 51	1 66	45	1 51	1 66	45	45	45	45	45	48	60
Glass.																	
Employees, flint glass works.....	128	143	128	15	1 55	1 55	60	50	2 40	2 40	128	15	143	143	143	55	55
Leather and Leather Goods.																	
Harness-makers.....	72	72	87	87	1 67	1 67	1 67	55	1 75	1 75	72	72	15	72	15	60	60
Harness-makers	498	498	552	552	1 60	1 60	1 96	308	1 56	1 92	303	308	70	308	70	48	60
Machines and Machinery.																	
Employees, safe and lock works...	1,230	1,230	1,230	.....	1 70	1 70	1 56	1,230	1 70	1 56	1,230	.....	1,230	1,230	.....	60	45
Employees, machine shop	240	240	214	.....	1 81	1 81	1 81	240	1 81	1 81	240	.....	240	240	.....	60	60
Boiler-makers.....	143	143	143	.....	2 09	2 09	2 00	143	2 09	2 00	143	.....	143	143	.....	60	51
Employees, safe and lock works...	180	180	180	.....	1 70	1 70	1 56	180	1 70	1 56	180	.....	180	180	.....	60	48
Employees, safe and lock works...	70	70	70	.....	1 47	1 47	1 62	70	1 47	1 62	70	.....	70	70	.....	60	54
Roller-makers.....	48	48	48	.....	1 64	1 64	1 79	28	2 00	2 25	48	.....	48	48	.....	60	60

(a) In addition to board and lodging.

STRIKES, BY YEARS AND INDUSTRIES—Continued.

Industries and years.	Number of employees.			Average daily wages.			Employees striking.			Employees striking and involved.			New employees after strike.		Brought from other places.	Weekly working hours.		
	Before strike.			After strike.			Number.	Daily pay.		Male.	Female.	Total.	Male.	Female.		Total.	Before strike.	After strike.
	Male.	Female.	Total.	Male.	Female.	Total.		Before.	After.									
1886.																		
<i>Metals and Metallic Goods.</i>																		
Nailers, nail works.....	200	.....	200	.....	\$2 17	.....	\$2 17	.....	34	\$8 00	\$8 00	200	.....	200	.....	61	61
Moulder and helpers, iron wks..	48	.....	48	.....	1 13	.....	1 63	.....	30	1 75	2 05	48	.....	48	9	60	60
Moulders, iron works.....	70	.....	70	.....	1 88	.....	2 06	.....	40	2 50	2 81	40	.....	40	.....	60	60
Moulders, iron foundry.....	202	.....	202	.....	1 52	.....	1 67	.....	95	2 50	2 81	202	.....	202	.....	60	60
Moulders, brass works.....	95	.....	90	.....	1 66	.....	1 81	.....	45	2 50	2 81	90	.....	90	.....	60	60
Employees, stove foundry.....	70	.....	70	.....	1 97	.....	2 08	.....	32	2 00	2 25	70	.....	70	.....	60	60
Employees, architectural, etc.	107	.....	160	.....	1 95	.....	2 01	.....	53	2 50	2 62	107	.....	107	.....	60	60
iron works.....	46	.....	46	.....	1 82	.....	1 82	.....	46	1 82	1 82	46	.....	46	.....	54	54
Employees, architectural, etc..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
iron works.....	80	.....	74	.....	1 88	.....	1 88	.....	80	1 88	1 84	80	.....	80	.....	54	54
Employees, bolt works.....	160	80	190	36	1 12	\$ 83	1 12	\$ 83	70	1 90	1 90	160	.....	190	.....	60	60
Finishers, brass works.....	160	.....	151	.....	1 61	.....	1 65	.....	41	1 79	1 96	41	.....	41	.....	60	60
Moulders, stove foundry.....	30	.....	30	.....	2 11	.....	2 31	.....	16	2 70	3 00	30	.....	30	.....	60	60
Labourers, iron works.....	650	.....	650	.....	1 26	.....	1 85	.....	185	1 15	1 25	650	.....	650	.....	60	60
Roughers, rolling mill.....	620	.....	620	.....	1 74	.....	1 75	.....	8	2 50	3 35	68	.....	68	.....	60	60
Feeders, nail works.....	190	.....	190	.....	2 29	.....	2 36	.....	117	1 32	1 43	190	.....	190	.....	60	60
Feeders, nail works.....	73	.....	73	.....	2 05	.....	2 05	.....	25	1 42	1 42	73	.....	73	.....	60	60
Moulders, hardware factory....	180	.....	180	.....	86	.....	87	.....	6	2 37	2 54	19	.....	19	.....	54	54
Employees, steel works.....	145	.....	145	.....	1 36	.....	1 36	.....	15	1 49	1 49	145	.....	145	.....	60	60
Moulders, iron foundry.....	36	.....	32	.....	1 55	.....	1 55	.....	16	2 25	2 25	36	.....	36	.....	60	60
Moulders, iron foundry ..	84	.....	58	.....	1 81	.....	1 81	.....	46	2 25	2 25	84	.....	84	.....	60	60
<i>Mining.</i>																		
Miners, coal.....	53	.....	53	.....	1 80	.....	1 89	.....	38	2 00	2 12	53	.....	53	2	60	60
Miners, coal.....	36	.....	31	.....	1 51	.....	1 54	.....	30	1 60	1 60	36	.....	36	.....	54	54
Miners, coal.....	205	.....	205	.....	1 56	.....	1 56	.....	170	1 60	1 60	205	.....	205	.....	54	54
Miners, coal.....	83	.....	(a)	.....	1 41	.....	(a)	.....	70	1 35	(a)	86	.....	86	.....	60	(a)
Miners, iron ore.....	58	.....	58	.....	1 65	.....	1 65	.....	45	1 65	1 65	45	.....	45	45	59	59
Miners, coal.....	65	.....	20	.....	1 84	.....	1 84	.....	55	1 88	1 88	65	.....	65	.....	60	60
Miners, coal.....	83	.....	20	.....	1 70	.....	1 40	.....	80	1 70	1 40	80	.....	80	20	54	54
Miners, coal.....	95	.....	34	.....	1 64	.....	1 52	.....	71	1 70	1 50	95	.....	95	21	54	54
Miners, coal.....	62	.....	35	.....	1 87	.....	1 65	.....	52	1 88	1 70	62	.....	62	2	60	60

(a) The owners allowed the mine to fill with water and abandoned it permanently.

STRIKES, BY YEARS AND INDUSTRIES—Concluded.

Industries and years.	Number of employees.				Average daily wages.				Employees striking.			Employees striking and involvd.			New employees after strike.			Brought from other places.	Weekly working hours.	
	Before strike.		After strike.		Before strike.		After strike.		Number.	Daily pay.		Male.	Female.	Total.	Male.	Female.	Total.		Before strike.	After strike.
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.												
1886.																				
Freight handlers, railroad.....	842	.....	842	842	.....	842	\$1 69	.....	196	\$1 25	\$1 35	196	.....	196	8	.....	8	60	60
Freight handlers, railroad.....	7,528	.....	7,528	7,528	.....	7,528	1 76	.....	230	1 25	1 36	230	.....	230	12	.....	12	60	60
Freight handlers, railroad.....	1,657	.....	1,657	1,657	.....	1,657	1 69	.....	64	1 23	1 37	64	.....	64	.....	.....	.....	60	60
Freight handlers, railroad.....	45	.....	45	45	.....	45	1 66	.....	10	1 25	1 25	10	.....	10	.....	.....	.....	60	60
Conductors, brakemen, etc.....	16	.....	16	16	.....	16	1 91	.....	10	1 91	2 05	16	.....	16	.....	.....	.....	60	60
Conductors, brakemen, etc.....	76	.....	76	76	.....	76	2 21	.....	48	2 04	2 14	76	.....	76	.....	.....	.....	60	60
Switchmen.....	128	.....	128	128	.....	128	1 87	.....	128	1 87	2 18	128	.....	128	.....	.....	.....	60	60
Switchmen.....	106	.....	106	106	.....	106	1 90	.....	106	1 90	2 10	106	.....	106	.....	.....	.....	60	60
Switchmen.....	45	.....	45	45	.....	45	1 90	.....	45	1 90	2 10	45	.....	45	.....	.....	.....	60	60
Brakemen.....	685	.....	685	685	.....	685	1 75	.....	117	1 75	1 75	685	.....	685	.....	.....	.....	75	75
Watches.																				
Employees, watch factory	90	60	150	90	60	150	1 75	\$1 00	150	1 45	1 45	90	60	150	.....	.....	.....	60	60
Wooden Goods.																				
Carpenters, planing-mill.....	85	.....	85	65	.....	65	2 11	.....	73	2 25	2 25	85	.....	85	4	.....	4	60	60
Carpenters, planing-mill.....	100	.....	100	100	.....	100	2 68	.....	40	2 80	2 80	40	.....	40	.....	.....	.....	60	48
Employees, coffin factory.....	280	80	360	280	80	360	1 19	83	360	1 11	1 11	280	80	360	.....	.....	.....	60	60
Employees, coffin factory.....	180	60	240	180	60	240	1 19	83	137	1 11	1 11	108	29	137	6	4	10	60	60	
Carpenters, planing-mill.....	53	.....	53	55	.....	55	1 58	.....	53	1 58	1 58	53	.....	53	20	.....	20	60	60
Carpenters, planing-mill.....	40	.....	40	40	.....	40	2 50	.....	37	2 50	2 50	35	.....	35	.....	.....	.....	60	60
Carpenters, planing-mill.....	78	.....	78	74	.....	74	2 08	.....	68	2 12	2 12	78	.....	78	6	.....	6	60	60
Carpenters, planing-mill.....	75	.....	75	75	.....	75	2 16	.....	60	2 50	2 50	75	.....	75	15	.....	15	60	60
Carpenters, planing-mill.....	17	.....	17	17	.....	17	2 18	.....	17	2 18	2 18	17	.....	17	.....	.....	.....	55	55
Carpenters, planing-mill.....	60	.....	60	60	.....	60	2 15	.....	54	2 25	2 25	54	.....	54	.....	.....	.....	60	60
Carpenters, planing-mill.....	50	.....	50	50	.....	50	1 92	.....	30	2 40	2 40	50	.....	50	.....	.....	.....	60	60
Carpenters, planing-mill.....	80	.....	80	77	.....	77	2 05	.....	20	2 50	2 50	60	.....	60	.....	.....	.....	60	60
Carpenters, planing-mill.....	28	.....	28	28	.....	28	1 90	.....	20	2 30	2 30	28	.....	28	5	.....	5	60	60
Carpenters, planing-mill.....	100	.....	100	100	.....	100	2 68	.....	40	2 80	2 80	40	.....	40	.....	.....	.....	48	48
Carpenters, planing-mill.....	51	.....	51	51	.....	51	2 05	.....	40	2 25	2 25	51	.....	51	.....	.....	.....	60	60
Miscellaneous.																				
Dippers, match factory	191	169	360	191	169	360	62	86	26	65	65	26	.....	26	6	.....	6	60	60
Scrapers, starch factory.....	113	17	130	113	17	130	99	78	12	1 17	1 17	12	.....	12	5	.....	5	60	60
Street cleaners	140	.....	140	140	.....	140	1 50	.....	140	1 50	1 75	140	.....	140	.....	.....	.....	60	60

ALL INDUSTRIES FOR ALL YEARS—Concluded.

Industry.	Number of employees.						Employees striking.	Employees striking and involved.			New employees after strike.			Brought from other places.
	Before strike.			After strike.				Male.	Female.	Total.	Male.	Female.	Total.	
	Male.	Female.	Total.	Male.	Female.	Total.								
Agricultural implements	1,230	.....	1,230	1,190	.....	1,190	354	481	.....	481	141	.....	141	75
Boots and shoes.....	2,704	2,282	4,986	2,711	2,295	5,006	734	2,432	2,022	4,454	28	23	51	6
Brewing.....	832	.....	832	792	.....	792	549	674	.....	674	100	.....	100	95
Brick	587	.....	587	586	.....	586	549	587	.....	587	.....	.....	.....	.....
Building trades	2,108	.....	2,108	2,063	.....	2,063	1,230	1,919	.....	1,919	57	.....	57	35
Carriages and wagons.....	4,110	120	4,230	4,081	120	4,201	1,481	2,891	72	2,963	80	.....	80	38
Clothing	42	190	232	42	190	232	187	37	150	187	.....	.....	.....	.....
Cooperage.....	1,395	.....	1,395	1,392	.....	1,392	1,099	1,116	.....	1,116	74	.....	74	10
Cotton goods	100	370	470	100	365	465	322	100	370	470	.....	6	6	.....
Domestic service.	24	.....	24	24	.....	24	19	19	.....	19	19	.....	19	.....
Food preparations	166	120	286	165	120	285	66	70	.....	70	34	.....	34	7
Furniture	2,747	98	2,845	2,653	63	2,716	2,221	2,417	55	2,472	125	.....	125	28
Glass.....	2,209	211	2,420	2,087	195	2,282	725	2,026	171	2,197	4	.....	4	4
Leather and leather goods.....	875	.....	875	959	.....	959	509	561	.....	561	100	.....	100	100
Machines and machinery.....	2,942	.....	2,942	2,749	.....	2,749	2,429	2,696	.....	2,696	32	.....	32	32
Metals and metallic goods	29,693	30	29,723	29,424	30	29,454	13,623	27,095	30	27,125	2,698	.....	2,698	1,144
Mining.....	61,452	.....	61,452	50,462	.....	50,462	38,925	50,698	.....	50,698	846	.....	846	753
Pottery, earthenware, etc.....	789	78	867	789	78	867	202	458	6	464	.....	.....	.....	.....
Printing and publishing.....	504	63	567	494	60	554	263	466	.....	266	188	.....	188	132
Public ways construction.....	850	.....	850	900	.....	900	850	850	.....	850	50	.....	50	.....
Public works construction.....	74	.....	74	127	.....	127	67	74	.....	74	72	.....	72	50
Railroad cars	1,357	.....	1,357	1,353	.....	1,353	35	35	.....	35	.....	.....	.....	.....
Rope and bagging.....	355	.....	355	355	.....	355	145	355	.....	355	.....	.....	.....	.....
Ship-building, etc.....	90	.....	90	90	.....	90	71	90	.....	90	.....	.....	.....	.....
Stone quarrying and cutting.....	1,146	.....	1,146	1,048	.....	1,048	868	880	.....	880	98	.....	98	53
Telegraphy. (Strike of July 19, 1883—See New York).	2,573	859	3,462	2,310	891	3,201	2,053	2,089	506	2,595	260	17	277	124
Tobacco.....	13,681	.....	13,681	13,681	.....	13,681	2,107	3,460	.....	3,460	23	.....	23	3
Transportation	90	60	150	90	60	150	150	90	60	150	.....	.....	.....	.....
Watches.....	1,277	140	1,417	1,252	140	1,392	1,047	1,054	109	1,163	56	4	60	24
Wooden goods	1,296	373	1,667	1,286	373	1,659	400	515	160	675	29	8	37	3
Miscellaneous.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total	127,698	5,024	132,722	125,255	4,980	130,235	73,286	106,935	3,711	109,746	5,114	58	5,172	2,716

LOCKOUTS BY YEARS AND INDUSTRIES.

Industries and years.	Locality.	Cause or object.	Ordered by organization.	Es'tabli-h-ments.		Beginning.	End.	Duration (days).	Succeeded.	Employees'—		Employers' loss.
				Number.	Days closed.					Loss.	Assistance.	
1882. <i>Pottery, Earthenware, etc.</i> Employees, pottery works Employees, pottery works	East Liverpool	To prevent employees joining labor organization	No...	1	44	June 16...	1883. Feb. 9.....	238	No	\$24,000	\$650	\$6,000
	East Liverpool	To prevent employees joining labor organization	No...	8	.....	June 16...	Feb. 9.....	238	No.....	116,448	5,528	33,000
1883. <i>Boots and Shoes.</i> Employees	Cincinnati	For violation of agreement.....	Yes..	14	14	May 14....	May 28....	14	Yes....	27,618	.....	14,403
	Cleveland	To enforce reduction of wages	Yes..	1	21	Jan. 24....	Feb. 14....	21	No.....	2,435	615	974
Cigarmakers	Cincinnati	To enforce reduction of wages	No...	1	14	Feb. 6	Feb. 20....	14	Yes....	587	180	125
	Columbus	To enforce reduction of wages	No...	1	.....	Aug. 25—	Sept. 8....	14	No.....	240	96	50
Cigarmakers	Cincinnati	To enforce reduction of wages	Yes..	1	.....	Oct. 28....	Nov. 27....	30	Yes....	144	78	50
	Cincinnati	To enforce reduction of wages	No...	1	.....	Dec. 21....	Jan. 20,'84	30	Yes....	150	60	25
1884. <i>Tobacco.</i> Cigarmakers	Cincinnati	Against demand for increase of wages..	Yes..	3	.....	Mar. 10 ...	April 15...	401	Yes....	285,000	220,000	140,000
	Cincinnati	Against demand for increase of wages..	Yes..	2	401	Mar. 10 ...	April 15...	401	Yes....	96,000	a	60,000
Cigarmakers	Cincinnati	Against demand for increase of wages..	Yes..	1	360	Mar. 10 ...	April 15...	401	Yes....	10,000	a	10,000
	Cincinnati	Against demand for increase of wages..	Yes..	1	122	Mar. 10 ...	April 15...	401	Yes....	75,000	a	75,000
Cigarmakers	Cincinnati	Against demand for increase of wages..	Yes..	1	275	Mar. 10 ...	April 15...	401	Yes....	12,000	a	10,000
	Cincinnati	Against demand for increase of wages..	Yes..	1	152	Mar. 10 ...	April 15...	401	Yes....	25,000	a	40,000
Cigarmakers	Eaton	Against union men.....	No...	3	.....	Mar. 17 ...	July 11....	481	Yes....	7,302	3,051	200
	Zanesville.....	To enforce reduction of wages.....	No...	1	.....	Dec. 20 ...	Aug. 15....	238	Yes....	665	364	400
1885. <i>Metals and Metallic Goods.</i> Nailers, etc., nail works..	Bridgeport	Against demand for adoption of union scale of wages.....	Yes..	1	103	May 30 ...	Sept. 10....	103	No.....	50,000	.....	.....

(a) Assistance for whole lockout, \$220,000.

LOCKOUTS BY YEARS AND INDUSTRIES—Continued.

Industries and years.	Locality.	Cause or object.	Ordered by organization.	Establishments.		Beginning.	End.	Duration (days).	Succeeded.	Employees'—		Employers' loss.
				Number.	Days closed.					Loss.	Assistance.	
1855. <i>Mining.</i>							1855.					
Miners and laborers, coal	Bridgeport	Against union men.....	No...	1	39	Sept. 28...	Nov. 6	39	Yes....	\$32,400	.....	\$60,000
<i>Printing and Publishing.</i>												
Employes	Columbus	For bringing suit for wages due.....	No...	1	.....	Jan. 3	March 1...	57	No	1,800	.....	800
1886. <i>Agricultural Implements.</i>							1886.					
Employes, mower and reaper works.....	Springfield	Against union men.....	No...	1	.....	Mar. 2	May 28.....	77	Yes....	21,924	\$1,035	25,000
Employes, mower and reaper works.....	Springfield	Against union men.....	No...	2	.....	Mar. 6	May 5.....	60	Yes....	15,457	273	5,000
<i>Cooperage.</i>												
Employes	Cincinnati	Against demand for adoption of new rules and low scale of prices.....	No...	1	14	Nov. 15...	Nov. 29...	14	Yes....	7,219	.....	1,548
<i>Machines and Machinery.</i>												
Boilermakers and helpers, locomotive boiler works	Cleveland	Against demand for discharge of non-union men	No...	1	12	June 18...	June 30...	12	Yes....	3,295	.....	600
<i>Metals and Metallic Goods.</i>												
Employes, iron works.....	Springfield	Against demand for increase of wages and change of pay day	No...	1	...	Feb. 27.....	April 27 ..	59	Yes....	17,159	78	10,000
Employes, iron furnace..	St. ubenville	Against demand for reduction of hours	No...	1	115	May 10.....	Sept. 2.....	115	Yes....	17,280	.....	.....

LOCKOUTS, BY YEARS AND INDUSTRIES—Continued.

Industries and years.	Number of employees.				Average daily wages.				Employees locked out.			Employees locked out and involved.			New employes after lockout.			Brought from other places.	Weekly working hours.	
	Before lockout.		After lockout.		Before lockout.		After lockout.		Number.	Daily pay.		Male.	Female.	Total.	Male.	Female.	Total.		Before lock-out.	After lock-out.
	Male.	Female.	Total.	Male.	Female.	Total.	Before.	After.												
1882.																				
Pottery, Earthenware, etc.																				
Employes, pottery works.....	80	20	100	80	20	100	\$1 67	\$ 73	65	\$2 06	\$2 06	65	.....	65	7	.....	7	54	54	54
Employes, pottery works.....	660	287	947	660	287	947	1 67	73	547	2 20	2 20	485	62	547	112	35	147	52	52	52
1883.																				
Boots and Shoes.																				
Employes	1,066	918	1,984	1,066	918	1,984	1 53	74	1,984	1 16	1 16	1,066	918	1,984	.....	.....	.....	60	60	60
Metals and Metallic Goods.																				
Employes, stove foundry	58	.....	58	58	.....	58	2 44	.....	54	2 44	2 44	54	.....	54	.....	.....	.....	60	60	60
Tobacco.																				
Cigar-makers.....	23	12	35	23	12	35	1 56	1 54	35	1 55	1 41	23	12	35	.....	.....	.....	56	56	56
Cigar-makers.....	17	4	21	17	4	21	1 45	1 25	12	1 85	1 85	12	.....	12	.....	.....	.....	56	56	56
Cigar-makers.....	10	2	12	7	2	9	1 66	1 66	3	1 85	.....	3	.....	3	.....	.....	.....	56	56	56
Cigar-makers.....	680	120	300	176	120	296	1 50	1 50	4	1 75	.....	4	.....	4	.....	.....	.....	56	56	56
1884.																				
Tobacco.																				
Cigar-makers.....	660	370	1,030	225	175	400	1 59	1 23	879	1 46	1 06	617	262	879	140	60	200	82	55	60
Cigar-makers.....	170	200	370	60	50	110	1 23	1 22	370	1 23	1 13	170	203	370	.....	15	15	.....	54	55
Cigar-makers.....	35	10	45	5	30	35	1 40	1 40	45	1 40	64	35	10	45	5	30	35	.....	56	60
Cigar-makers.....	105	60	165	10	75	85	2 25	2 25	165	2 25	88	105	60	165	10	75	85	.....	56	56
Cigar-makers.....	40	.....	40	20	.....	20	1 66	.....	40	1 66	83	40	.....	40	16	.....	16	.....	58	60
Cigar-makers.....	100	50	150	75	30	105	1 50	1 35	150	1 50	1 35	100	50	150	35	25	60	.....	56	60
Cigar-makers.....	23	6	29	16	6	22	1 50	65	29	1 52	1 27	23	6	29	14	.....	14	.....	56	56
Cigar-makers.....	7	3	10	1	9	10	1 33	42	5	1 42	.....	5	.....	5	.....	6	6	.....	55	55
1885.																				
Metals and Metallic Goods.																				
Nailers, etc., nail works.....	450	.....	450	450	.....	450	2 10	.....	450	2 10	2 10	450	.....	450	.....	.....	.....	.....	60	60
Mining.																				
Miners and laborers, coal.....	600	.....	600	500	.....	500	1 80	.....	600	1 80	1 80	600	.....	600	30	.....	30	.....	60	60

LOCKOUTS, BY YEARS AND INDUSTRIES—Concluded.

Industries and years.	Number of employees.				Average daily wages.				Employees locked out.			Employees locked out and involved.			New employees after lockout.			Brought from other pieces.	Weekly working hours.	
	Before lockout.		After lockout.		Before lockout.		After lockout.		Number.	Daily pay.		Male.	Female.	Total.	Male.	Female.	Total.		Before lock-out.	After lock-out.
	Male.	Female.	Total.	Male.	Female.	Total.	Before.	After.												
1885—Continued.	15	.....	15	15	.....	15	\$2 50	.....	15	\$2 50	\$2 50	15	.....	15	.....	.....	.....	45	45
	
1886.	1,200	.....	1,200	1,600	.....	1,600	1 45	.....	660	1 40	1 40	660	.....	660	710	.....	.....	60	60
	800	.....	800	800	.....	800	1 45	.....	205	1 40	1 40	205	.....	205	80	.....	80	60	60
Cooperage.	520	.....	520	520	.....	520	1 28	.....	520	1 28	1 28	520	.....	520	.....	.....	.....	60	60
	
Machines and Machinery.	202	.....	202	202	.....	202	1 56	.....	202	1 56	1 45	202	.....	202	45	.....	45	60	60
	
Metals and Metallic Goods.	450	.....	450	450	.....	450	1 54	.....	335	1 50	1 50	335	.....	335	210	.....	210	60	60
	120	.....	120	120	.....	120	1 60	.....	120	1 60	1 60	120	.....	120	.....	.....	.....	60	60

PART IV.

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, THE NUMBER OF WEEKS INDUSTRIES WERE IN OPERATION, HOW OFTEN THEY PAY, THE AMOUNT OF CAPITAL INVESTED AND THE VALUE OF ANNUAL PRODUCT.

Lima, Allen County..

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
2	Breweries	2	.....	52	W.....	\$800,000	\$600
	Breweries	10	.....	52	2 M.....	25,000	21,000
1	Boiler shop.....	4	.....	52	W.....	600	2,500
2	Case works.....	10	.....	52	2 M.....	50,000	25,000
4	Cigar manufacturing.....	30	.....	52	W.....	10,000	14,000
2	Carriage works.....	16	.....	52	W.....	8,500	34,000
1	Car shop.....	315	.....	52	2 M.....	250,000	1,200,000
2	Drill manufacturing.....	85	.....	52	W.....	153,500	150,000
1	Egg case manufacturing.....	10	18	52	W.....	250,000	200,000
1	Engine works.....	7	.....	52	W.....	7,000	6,000
1	Flour-mill	6	.....	52	W.....	20,000	30,000
2	Furniture manufacturing.....	20	.....	48	W.....	21,000	16,600
1	Gas-light works.....	14	.....	52	M.....	200,000	240,000
1	Handle factory.....	23	.....	45	M.....	25,000	25,000
2	Iron tank manufacturing.....	80	.....	52	M.....	} 17,000	112,000
	Iron tank manufacturing.....	6	.....	52	W.....		
1	Iron and slate roofers.....	10	.....	40	W.....	3,000	15,000
2	Laundries	5	17	52	W.....	4,800	13,000
6	Machine shops.....	344	.....	52	M.....	} 221,000	361,000
	Machine shops.....	17	.....	52	W.....		
1	Natural gas and oil contractors.....	12	.....	52	M.....	5,000	2,000*
1	Oil works.....	3	.....	52	W.....	20,000	50,000
1	Paper-mill	115	.....	52	M.....	250,000	220,000
5	Printing offices.....	46	.....	52	W.....	} 61,000	70,000
	Printing offices.....	12	2	52	M.....		
1	Plumbing works.....	37	.....	52	W.....	5,000	30,000*
2	Planing-mills	19	.....	40	W.....	30,000	25,000
1	Railroad shop	235	.....	52	M.....	.....	.....
1	Radiator manufacturing.....	22	.....	52	W.....	10,000	12,000
	Shipper of butter and eggs.....	15	.....	52	W.....	30,000	150,000
1	Stave and box manufacturing.....	5	.....	52	W.....	600	4,800
1	Tannery	10	.....	52	W.....	10,000	10,000
1	Tool works.....	9	.....	52	W.....	900	500
1	Wheel manufacturing.....	85	.....	52	M.....	50,000	90,000
1	Water-works	6	.....	52	M.....	340,000	300,000
	Bricklayers.....	40	.....	38	W.....	.....	.....
	Blacksmiths.....	35	.....	52	W.....	.....	.....
	Clerks in stores.....	200	35	52	W.....	.....	.....
	Carpenters	42	.....	42	W.....	.....	.....
	Dress-makers.....	.....	125	52	W.....	.....	.....
	Hod-carriers	26	.....	38	W.....	.....	.....
	Plasterers	18	.....	32	W.....	.....	.....
	Painters.....	25	.....	35	W.....	.....	.....
	Stone masons.....	16	.....	40	W.....	.....	.....
	Street laborers.....	120	.....	40	W.....	.....	.....
	Tailors	100	40	52	W.....	.....	.....
50	Total	2,267	237	.....	.....	\$2,079,700	\$3,430,000

Average number weeks in operation during the year, 49 2-23.

* Estimated.

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Ashland, Ashland County.

No. of establishments.	Industrial establishments.	Number of men em- ployed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invest d.	Value of annual pro- duct.
1	Bottling works.....	9	.....	52	W.....	\$2,000	\$9,000
1	Bed spring manfg.....	12	.....	52	2 M.....	5,000	7,000
1	Cigar factory.....	5	.....	52	W.....	1,000	4,500
2	Carriage works.....	13	.....	52	W.....	19,000	13,000
1	Elevator works.....	2	.....	52	W.....	12,000	4,000
2	Flour-mills.....	13	.....	52	W.....	15,000	65,000
1	Hub works.....	25	.....	40	W.....	10,000	20,000
2	Planing-mills.....	11	.....	50	W.....	56,000	4,000
	Planing-mills.....	8	.....	52	W.....		125,000
1	Pump works.....	62	.....	52	W.....	50,000	20,000
4	Printing offices.....	15	5	52	W.....	20,000	.....
	Bricklayers.....	4	.....	38	W.....	.....	.....
	Blacksmiths.....	6	.....	52	W.....	.....	.....
	Clerks in stores.....	40	3	52	W.....	.....	.....
	Carpenters.....	10	.....	50	W.....	.....	.....
	Dress-makers.....	.....	8	52	W.....	.....	.....
	Hod carriers.....	6	.....	33	W.....	.....	.....
	Plasterers.....	6	.....	38	W.....	.....	.....
	Painters.....	10	.....	48	W.....	.....	.....
	Stone masons.....	3	.....	44	W.....	.....	.....
	Tailors.....	7	.....	52	W.....	.....	.....
16	Total.....	267	16	.....	.....	\$190,000	\$308,500

Average number weeks in operation during the year, 48 2-3. Number of organized men, 147.

Ashtabula, Ashtabula County.

1	Agricultural tool manfg.....	90	.....	47	2 M.....	75,000	150,000
1	Brass foundry.....	7	.....	52	W.....	7,000	5,000
2	Carriage manufacturing.....	80	.....	48	W.....	24,000	74,000
	Carriage manufacturing.....	8	.....	52	W.....		.....
1	Flour-mill.....	4	.....	52	W.....	15,000	15,000
5	Machine shops and foundries.....	45	.....	52	W.....	71,000	13,000
1	Nail machine manufacturing.....	26	.....	52	2 M.....	25,000	15,000
4	Printing offices.....	10	4	52	W.....	19,000	13,300
1	Plow handle manfg.....	10	.....	52	2 M.....	15,000	20,000
2	Planing-mills.....	8	.....	36	W.....	25,000	45,000
	Planing-mills.....	16	.....	52	W.....		.....
1	Rubber company.....	16	80	50	W.....	40,000	100,000
2	Tanneries.....	32	.....	52	W.....	28,000	85,000
1	Wooden pipe manufacturing.....	4	.....	52	W.....	15,000	6,000
	Street laborers.....	6	.....	36	W.....	.....	.....
	Bricklayers.....	12	.....	36	W.....	.....	.....
	Plasterers.....	20	.....	38	W.....	.....	.....
	Painters.....	35	.....	40	W.....	.....	.....
	Stone masons.....	25	.....	40	W.....	.....	.....
	Carpenters.....	90	.....	45	W.....	.....	.....
	Hod-carriers.....	50	.....	36	W.....	.....	.....
	Blacksmiths.....	15	.....	52	W.....	.....	.....
22	Total.....	609	84	.....	.....	\$359,000	\$641,200

Average number of weeks in operation during the year, 46 6-11. Number of organized men, 140.

Geneva, Ashtabula County.

1	Agricultural implement manufacturing.....	70	.....	48	M.....	100,000	100,000
1	Cigar manufacturing.....	2	.....	26	W.....	1,200	1,700
1	Carpet sweeper manufacturing.....	7	3	52	M.....	4,000	5,000
1	Machine shop.....	4	.....	52	M.....	20,000	20,000
1	Novelty works.....	32	.....	50	M.....	40,000	50,000
1	Planing mill and type case manufactur'g.....	20	.....	52	M.....	20,000	30,000
2	Printing offices.....	8	3	52	M.....	12,500	8,500
1	Skewer manufacturing.....	9	.....	45	M.....	14,000	19,000
1	Sock manufacturing.....	3	.....	52	M.....	25,000	25,000

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Geneva, Ashtabula County—Concluded.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
	Bricklayers	9	.....	36	W.....	.....	.....
	Blacksmiths	5	.....	52	W.....	.....	.....
	Clerks in stores	33	8	52	W.....	.....	.....
	Carpenters	20	.....	45	W.....	.....	.....
	Dress-makers .....	.....	15	52	W.....	.....	.....
	Hod-carriers	7	.....	36	W.....	.....	.....
	Plumbers	2	.....	52	W.....	.....	.....
	Painters	8	.....	40	W.....	.....	.....
	Plasterers	6	.....	38	W.....	.....	.....
	Street laborers	3	.....	36	W.....	.....	.....
	Tailors	4	.....	52	W.....	.....	.....
10	Total	252	29	.....	.....	\$236,700	\$259,200

Average number of weeks in operation, 46.

Jefferson.

	Creamery	7	.....	52	W.....	20,000	40,000
1	Cheese factory	2	.....	36	W.....	3,000	7,000
2	Cigar factories	5	.....	52	W.....	2,150	6,000
1	Flour-mill	3	.....	52	W.....	20,000	40,000
1	Fruit evaporator	6	.....	15	W.....	600	1,000
2	Furniture manufactories	2	.....	52	W.....	7,000	4,000
1	Harness shop	1	.....	52	W.....	500	2,000
1	Lumber yard	4	.....	52	W.....	3,000	10,000
2	Machine shop	3	.....	52	W.....	1,800	1,600
1	Planing-mill	2	.....	52	W.....	3,000	1,000
2	Printing offices	5	5	52	W.....	11,000	6,000
3	Saw-mills	3	.....	40	W.....	5,000	9,500
	Saw-mills	5	.....	30	W.....		
	Saw-mills	7	.....	50	W.....		
1	Tannery	2	.....	52	W.....	7,000	10,000
1	Tinware manufactory	1	.....	52	W.....	1,000	1,000
	Railroad laborers	14	.....	52	M.....	.....	.....
	Day laborers	50	50	36	W.....	.....	.....
	Street laborers	6	.....	36	W.....	.....	.....
	Bricklayers	8	.....	36	W.....	.....	.....
	Painters	8	.....	38	W.....	.....	.....
	Carpenters	14	.....	45	W.....	.....	.....
	Hod-carriers	3	.....	40	W.....	.....	.....
	Blacksmiths	7	.....	52	W.....	.....	.....
	Tailors	3	1	52	W.....	.....	.....
	Dress-makers .....	.....	15	52	D.....	.....	.....
	Plumbers	2	.....	52	W.....	.....	.....
	Clerks in stores	30	3	52	W.....	.....	.....
20	Total	203	74	.....	.....	\$85,050	\$139,100

Average number of weeks in operation during the year, 45 13-14. Number of organized men, 95.

Athens, Athens County.

1	Brick yard	15	.....	40	W.....	5,000	8,000
1	Carriage manufactory	10	.....	52	W.....	7,000	8,000
2	Cigar manufactories	9	.....	52	W.....	700	9,000
	Cigar manufactories	6	.....	50	W.....		
1	Egg packing establishment	7	.....	52	W.....	3,000	15,000
1	Flour-mill	5	.....	52	W.....	15,000	30,000
3	Printing offices	13	2	52	W.....	19,500	20,500
2	Planing-mills	18	.....	52	M.....	7,500	18,000
	Planing-mills	4	.....	52	W.....		
1	Tannery	7	.....	52	W.....	4,500	6,000
1	Wagon brake manufactory	10	.....	52	M.....	3,000	*

* Not given.

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Athens, Athens County—Concluded.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
1	Water wheel machinery manufactory	22	.....	52	2 M.....	\$10,000	\$20,000
	Blacksmiths.....	7	.....	52	W.....	.....	.....
	Bricklayers.....	6	.....	38	W.....	.....	.....
	Clerks in stores	88	.....	52	W.....	.....	.....
	Carpenters.....	10	.....	38	2 M.....	.....	.....
	Dress-makers.....	.....	7	52	W.....	.....	.....
	Hod-carriers	7	.....	45	W.....	.....	.....
	Plumbers	2	.....	40	W.....	.....	.....
	Painters.....	5	.....	45	W.....	.....	.....
	Plasterers	9	.....	38	2 M.....	.....	.....
	Street laborers.....	30	.....	38	2 M.....	.....	.....
	Stonemasons.....	7	.....	40	W.....	.....	.....
	Tailors	10	.....	52	W.....	.....	.....
14	Total	257	9	.....	.....	\$75,200	\$134,500

Average number of weeks in operation, 47½.

Minster, Auglaize County.

1	Brewery	8	.....	52	W.....	30,000	35,000
2	Boot and shoe factories	10	.....	52	W.....	2,000	7,250
1	Carriage manufactory	7	.....	42	W.....	2,500	6,000
1	Cooper shop	40	.....	45	W.....	6,000	25,000
1	Flour-mill	4	.....	50	W.....	10,000	13,000
1	Saw-mill	6	.....	52	W.....	5,000	6,000
1	Woolen-mill	7	8	39	W.....	10,000	7,000
	Bricklayers.....	2	.....	40	W.....	.....	.....
	Blacksmiths.....	6	.....	52	W.....	.....	.....
	Clerks in stores	7	.....	52	W.....	.....	.....
	Carpenters	14	.....	48	W.....	.....	.....
	Dress-makers.....	.....	11	52	W.....	.....	.....
	Laborers ..	14	.....	45	W.....	.....	.....
	Plasterers	2	.....	38	W.....	.....	.....
	Painters.....	4	.....	40	W.....	.....	.....
	Tailors	5	.....	52	W.....	.....	.....
8	Total	136	19	.....	.....	\$65,500	\$99,250

Average number of weeks in operation, 46 15-16.

New Bremen.

2	Creameries.....	8	.....	52	W.....	8,000	12,000
1	Carriage manufactory	8	.....	40	W.....	5,000	4,000
1	Flour-mill.....	5	.....	52	W.....	15,000	10,000
1	Furniture manufactory	10	.....	36	W.....	8,000	6,000
1	Handle factory.....	6	.....	30	W.....	2,000	5,000
1	Machine shop	18	.....	42	W.....	30,000	16,000
2	Planing-mills	9	.....	40	W.....	} 20,000	17,000
2	Planing-mills	6	.....	50	W.....		
2	Printing offices	5	.....	52	W.....	6,600	5,500
1	Tile factory	4	.....	40	W.....	2,000	2,000
1	Woolen-mill	11	6	50	W.....	20,000	20,000
13	Total	90	6	.....	.....	\$116,600	\$97,500

Average number of weeks in operation during the year, 44.

Wapakoneta.

1	Brewery	6	.....	52	W.....	30,000	160,000
1	Bend works.....	50	.....	52	W.....	20,000	50,000
1	Bolt works.....	7	.....	52	W.....	6,000	7,000
2	Carriage works.....	19	.....	50	W.....	10,000	20,000

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Wapakoneta, Auglaize County—Concluded.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
2	Cigar factories.....	6	.....	52	W.....	\$1,200	\$3,000
2	Churn and measure manufactories.....	34	.....	52	W.....	14,000	25,000
2	Elevators and mills.....	12	.....	52	W.....	28,000	50,000
1	Flouring mill.....	20	.....	52	M.....	8,000	14,000
1	Furniture manufactory.....	17	.....	52	W.....	17,000	15,000
2	Printing offices.....	7	.....	52	W.....	14,500	14,000
1	Saw-mill.....	8	.....	52	W.....	5,000	8,000
1	Spoke and handle manufactory.....	80	.....	52	W.....	70,000	60,000
1	Warehouse.....	3	.....	52	M.....	16,000	130,000
	Bricklayers.....	5	.....	38	W.....	.....	.....
	Clerks in stores.....	78	15	52	W.....	.....	.....
	Dressmakers.....	.....	14	50	W.....	.....	.....
	Hodcarriers.....	3	.....	36	W.....	.....	.....
	Plasterers.....	4	.....	40	W.....	.....	.....
	Stonemasons.....	2	.....	36	W.....	.....	.....
	Street laborers.....	27	.....	40	W.....	.....	.....
	Tailors.....	30	20	52	W.....	.....	.....
18	Totals.....	418	49	.....	.....	\$239,700	\$553,000

Average number of weeks in operation, 48 10-21.

Barnesville, Belmont County.

1	Car wheel manufactory.....	37	.....	50	W.....	33,000	75,000
1	Carriage works.....	6	.....	52	W.....	2,500	6,000
3	Cigar factories.....	51	56	52	W.....	25,000	75,000
2	Flour mills.....	8	.....	52	W.....	31,000	45,000
1	Gas works.....	4	.....	52	M.....	22,500	5,000
1	Glass works.....	116	.....	38	W.....	60,000	140,000
1	Marble works.....	3	.....	52	W.....	1,500	3,000
1	Machine shop.....	4	.....	52	W.....	3,000	1,200
3	Printing offices.....	18	8	52	W.....	17,000	37,000
3	Planing mills.....	20	.....	52	W.....	20,000	40,000
1	Tannery.....	4	.....	52	W.....	6,000	15,000
1	Woolen mill.....	4	8	50	M.....	5,000	*
	Bricklayers.....	2	.....	38	W.....	.....	.....
	Carpenters.....	16	.....	45	W.....	.....	.....
	Clerks in stores.....	36	5	52	W.....	.....	.....
	Dressmakers.....	.....	34	52	W.....	.....	.....
	Plasterers.....	6	.....	38	W.....	.....	.....
	Painters.....	6	.....	40	W.....	.....	.....
	Stonemasons.....	4	.....	38	W.....	.....	.....
	Tailors.....	7	10	50	W.....	.....	.....
19	Totals.....	352	121	.....	.....	\$226,500	\$442,400

Average number of weeks in operation during the year, 47 19-20. Number of organized men, 114.

Bellaire.

1	Brick kiln.....	24	.....	40	W.....	10,000	28,000
1	Flour mill.....	6	.....	52	W.....	40,000	80,000
1	Foundry.....	50	.....	44	2 M.....	35,000	75,000
8	Glass factories.....	609	35	40	W.....	449,365	874,000
	Glass factories.....	8	.....	52	2 M.....		
	Glass factories.....	55	22	43	W.....		
	Glass factories.....	175	18	38	W.....		
	Glass factories.....	59	.....	22	W.....		
3	Iron, steel and nail manufactories.....	267	.....	18	2 M.....	850,000	2,155,209
	Iron, steel and nail manufactories.....	86	.....	44	2 M.....		
	Iron, steel and nail manufactories.....	288	.....	38	2 M.....		
3	Printing offices.....	14	1	52	W.....	5,800	7,000
2	Paper mills.....	15	1	52	W.....	27,000	74,000

* Just started.

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Bellaire—Concluded.

No. of establishment.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
1	Planing mill	18	.....	51	W	\$20,000	\$50,000
1	Stamping works.....	85	15	52	W	50,000	150,000
16	Totals	1,759	92	.....	.....	\$1,037,800	\$2,619,209

Average number of weeks in operation, 42 8-15. Number of organized men, 825.

Bridgeport.

1	Cooper shop.....	7	.....	50	2 M.....	1,000	5,000 ⁰
1	Flour mill	4	.....	52	W	2,000	7,000
2	Glass works	330	15	44	W	100,000	150,000
1	Machine shop	4	.....	52	W	3,000	8,000 ⁰
1	Planing mill	32	.....	50	W	70,700	100,000 ⁰
2	Rolling mills.....	790	.....	46	2 M	500,000	1,350,000
	Bricklayers.....	16	.....	38	2 M .....	.....	.....
	Stonemasons.....	9	.....	40	2 M .....	.....	.....
8	Totals.....	1,192	15	.....	.....	\$676,700	\$1,620,000

Average number of weeks in operation during the year, 45¼. Number of organized men, 575.

Martin's Ferry.

1	Agricultural implement manufactory	35	.....	52	W	50,000	50,000
1	Cooperage.....	100	.....	52	2 M.....	45,000	75,000
1	Foundry	25	.....	45	W	40,000	28,000
1	Furnace.....	38	.....	40	2 M.....	.....	.....
2	Glass manufactories	139	20	39	W	} 171,000	170 900
	Glass manufactories.....	237	30	46	2 M.....		
1	Machine shop	23	.....	45	2 M.....	20,000	25,000
1	Nail manufactory.....	400	.....	52	2 M	300,000	380,000
2	Planing mills	14	.....	44	W	} 20,500	21,000
	Planing mills	6	.....	52	W		
1	Tool manufactory	3	.....	52	W	5,000	6,000
11	Totals	1,020	50	.....	.....	\$651,500	\$655,000

Average number of weeks in operation, 47 2-11. Number of organized men, 600.

Somerton.

1	Tobacco works	21	44	32	*	25,000	30,000
	Blacksmiths.....	2	.....	38	W .....	.....	.....
	Carpenters	6	.....	40	W .....	.....	.....
	Clerks in stores.....	6	.....	52	W .....	.....	.....
	Dressmakers.....	.....	4	52	W .....	.....	.....
	Stonemasons	2	.....	38	W .....	.....	.....
	Str. laborers	11	.....	38	W .....	.....	.....
	Tinner	1	.....	52	W .....	.....	.....
	Wagonmaker.....	1	.....	52	W .....	.....	.....
1	Totals	50	48	.....	.....	\$25,000	\$30,000

Average number of weeks in operation during the year, 43 7-9.

Ripley, Brown County.

1	Carriage manufactory	6	.....	52	W	8,000	3,000
1	Cigar factory	20	12	52	W	5,000	16,200
2	Machine works.....	14	.....	52	W	12,000	18,000
2	Piano manufactories.....	3	.....	16	W	} 2,400	4,34
	Piano manufactories	6	.....	52	W		
1	Planing mill	100	.....	52	W	85,000	200,000
	Bricklayers.....	3	.....	38	W .....	.....	.....

* No regular weeks.

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Ripley, Brown County—Concluded.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
	Blacksmiths.....	6	.....	52	W.....	.....	.....
	Clerks in stores.....	10	.....	52	W.....	.....	.....
	Carpenters.....	10	.....	45	W.....	.....	.....
	Dress-makers.....	.....	8	52	W.....	.....	.....
	Hod-carriers.....	4	.....	38	W.....	.....	.....
	Plumbers.....	2	.....	52	W.....	.....	.....
	Painters.....	9	.....	40	W.....	.....	.....
	Plasterers.....	10	.....	45	W.....	.....	.....
	Stonemasons.....	4	.....	40	2 M.....	.....	.....
	Tanners.....	8	.....	52	W.....	.....	.....
	Tailors.....	5	4	52	W.....	.....	.....
6	Total.....	220	24	.....	.....	\$112,400	\$241,540

Average number of weeks in operation, 46⅓. Number of organized men, 79.

Hamilton, Butler County.

5	Agricultural implements manufactories..	175	1	52	W.....	} 277,000	345,000
	Agricultural implements manufactories..	425	1	52	2 M.....		
	Agricultural implements manufactories..	40	1	42	W.....		
5	Breweries.....	17	.....	52	W.....	} 242,400	270,000
	Breweries.....	6	.....	40	M.....		
	Breweries.....	13	.....	36	W.....		
	Breweries.....	6	.....	45	W.....		
	Breweries.....	60	.....	52	M.....	} 7,000	37,000
1	Boot and shoe factory.....	21	9	52	W.....		
1	Blankets and pelts manufactory.....	30	30	52	W.....	100,000	150,000
1	Castor company.....	23	.....	52	W.....	20,000	65,000
1	Casting manufactory.....	70	.....	52	W.....	55,000	90,000
2	Engine manufactory.....	180	.....	52	W.....	290,000	410,000
3	Flour-mills.....	43	.....	52	W.....	406,000	866,000
2	Foundries.....	55	.....	51	W.....	} 256,000	220,000
	Foundries.....	158	.....	50	W.....		
1	Gas-light and coke company.....	18	.....	52	M.....	150,000	30,000
2	Knitting-mills.....	5	100	52	W.....	} 35,000	108,000
	Knitting-mills.....	4	73	52	2 M.....		
2	Machine shops.....	136	7	52	W.....	138,000	178,000
2	Marble and granite works.....	21	.....	52	W.....	37,000	37,000
3	Paper-mills.....	30	.....	40	W.....	} 450,000	510,000
	Paper-mills.....	112	107	52	W.....		
2	Planing-mills.....	102	.....	52	W.....	105,000	180,000
4	Printing offices.....	51	.....	52	W.....	49,000	54,500
3	Spoke and buggy manufactories.....	39	.....	52	W.....	38,000	35,000
1	Steam pumps manufactory.....	108	.....	52	2 M.....	100,000	205,000
1	Tile works.....	13	10	52	W.....	35,000	30,000
	Bricklayers.....	12	.....	45	W.....	.....	.....
	Plasterers.....	15	.....	40	W.....	.....	.....
	Painters.....	14	.....	40	W.....	.....	.....
	Stonemasons.....	8	.....	36	W.....	.....	.....
	Carpenters.....	10	.....	45	W.....	.....	.....
	Hod-carriers.....	13	.....	36	W.....	.....	.....
	Blacksmiths.....	14	.....	52	W.....	.....	.....
	Tailors.....	15	.....	52	W.....	.....	.....
	Clerks in stores.....	74	14	52	W.....	.....	.....
42	Total.....	2,136	353	.....	.....	\$2,798,000	\$3,820,500

Average number of weeks in operation during the year, 48 18-37. Number of organized men, 325.

Middletown.

1	Buggy manufactory.....	15	.....	52	W.....	20,000	60,000
1	Brewery.....	20	.....	52	W.....	100,000	85,000
1	Flour mill.....	8	1	52	W.....	25,000	65,000
2	Machine and repairing shops.....	6	.....	32	W.....	} 10,000	41,000
	Machine and repairing shops.....	18	.....	52	W.....		

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Middletown, Butler County—Concluded.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
1	Planing-mill	53	.....	52	W.....	\$20,000	\$60,000
1	Paper manufactory	75	6	52	W.....	200,000	350,000
3	Paper sack manufactories	45	5	52	W.....	} 315,000	495,000
	Paper sack manufactories	87	41	52	W.....		
2	Printing offices.....	11	8	52	W.....	28,500	25,000
2	Tobacco and cigar factories.....	200	200	48	W.....	} 201,500	1,623,000
	Tobacco and cigar factories.....	25	.....	52	W.....		
14	Total	563	261	.....	.....	\$920,000	\$2,804,000

Average number of weeks in operation, 50. Number of organized men, 360.

Carrollton, Carroll County.

1	Brick and tile works.....	9	.....	35	M.....	6,000	10,000
1	Carriage factory.....	13	.....	52	M.....	3,000	8,000
1	Creamery	4	.....	30	M.....	2,000	5,000
	Foundries	6	1	52	W.....	2,000	2,000
	Tannery.....	5	.....	40	W.....	1,000	1,500
	Bricklayers.....	6	.....	38	W.....	.....	.....
	Carpenters	9	.....	45	W.....	.....	.....
	Clerks in stores.....	7	.....	52	W.....	.....	.....
	Dress-makers.....	.....	7	52	W.....	.....	.....
	Plumbers.....	3	.....	40	W.....	.....	.....
	Plasterers	5	.....	45	W.....	.....	.....
	Stonemasons.....	4	.....	38	W.....	.....	.....
	Street laborers.....	8	.....	38	2 M.....	.....	.....
	Tailors	3	.....	52	W.....	.....	.....
6	Total	82	8	.....	.....	\$14,000	\$26,500

Average number of weeks in operation, 43½.

St. Paris, Champaign County.

2	Carriage manufactories	13	.....	52	W.....	7,500	10,000
1	Flour-mill.....	5	.....	52	W.....	20,000	50,000
1	Printing office.....	4	.....	52	W.....	2,500	3,000
2	Planing-mills	16	.....	52	W.....	25,000	50,000
	Bricklayers.....	2	.....	38	W.....	.....	.....
	Blacksmiths.....	8	.....	52	W.....	.....	.....
	Clerks in stores.....	18	3	52	W.....	.....	.....
	Dress-makers.....	.....	5	50	W.....	.....	.....
	Hod-carriers	2	.....	38	W.....	.....	.....
	Plasterers	3	.....	38	W.....	.....	.....
	Painters	8	.....	38	W.....	.....	.....
	Stonemasons.....	2	.....	40	W.....	.....	.....
	Tailors	2	.....	52	W.....	.....	.....
6	Total	83	8	.....	.....	\$55,000	\$113,000

Average number weeks in operation during the year, 46 8-13.

Urbana.

2	Brick manufactories	14	.....	30	W.....	5,500	7,500
4	Broom manufactories	105	6	50	W.....	85,500	157,000
1	Box manufactory.....	13	.....	40	W.....	6,000	15,000
5	Cigar factories.....	50	18	52	W.....	14,900	47,700
3	Carriage works.....	34	.....	52	W.....	44,000	78,000
1	Car shop.....	256	.....	52	2 W.....	250,000	1,000,000
2	Elevator manufactories	4	.....	52	M.....	} 19,000	30,000
	Elevator manufactories	4	.....	52	W.....		
1	Fence manufactory.....	3	.....	52	W.....	700	2,500
2	Foundries.....	28	.....	52	2 W.....	13,000	20,000
1	Flour-mill.....	8	.....	52	W.....	20,000	40,000

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Urbana, Champaign County—Concluded.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
1	Glue manufacturing.....	8	.....	26	W.....	\$8,000	\$15,000
1	Laundry.....	3	7	52	W.....	700	3,500
1	Machine shop.....	6	.....	52	W.....	4,000	7,000
1	Plow manufacturing.....	6	.....	52	W.....	6,000	5,000
2	Planing mills.....	19	.....	45	W.....	103,500	106,000
3	Printing offices.....	19	5	52	W.....	18,500	18,000
1	Tannery.....	8	.....	52	W.....	30,000	60,000
1	Woolen mill.....	41	4	52	2 W.....	35,000	75,000
	Street laborers.....	20	.....	38	.....	.....	.....
	Bricklayers.....	10	.....	40	.....	.....	.....
	Plasterers.....	9	.....	40	.....	.....	.....
	Painters.....	12	.....	45	.....	.....	.....
	Stone-masons.....	8	.....	48	.....	.....	.....
	Carpenters.....	15	.....	50	.....	.....	.....
	Hod-carriers.....	9	.....	40	.....	.....	.....
	Blacksmiths.....	10	.....	52	.....	.....	.....
	Tailors.....	11	.....	50	.....	.....	.....
	Dressmakers.....	.....	13	52	.....	.....	.....
	Plumbers.....	2	.....	40	.....	.....	.....
	Clerks in stores.....	45	20	52	.....	.....	.....
33	Total.....	780	73	.....	.....	\$664,300	\$1,687,200

Average number of weeks in operation during the year, 47 9-31. Number of organized men, 300.

Springfield, Clarke County.

8	Agricultural implement manufacturing	750	5	52	W.....	\$3,560,590	*\$1,500,000
	Agricultural implement manufacturing	150	2	50	W.....		
	Agricultural implement manufacturing	749	1	48	W.....		
	Agricultural implement manufacturing	819	1	48	2 M.....		
2	Brass foundries.....	35	.....	52	W.....	26,000	20,000
1	Blacksmith and wagon repair shop.....	9	.....	52	W.....	5,000	8,000
1	Bar and knife manufacturing.....	275	.....	51	2 M.....	400,000	400,000
1	Brewery and malt house.....	25	.....	52	W.....	100,000	135,000
2	Carriage manufacturing.....	25	.....	52	W.....	28,000	55,000
1	Carriage manufacturing.....	12	.....	50	W.....		
	Carriage seat manufacturing.....	7	.....	40	W.....	6,000	35,000
2	Cigar manufacturing.....	11	3	52	W.....	5,500	8,500
1	Cider mill.....	60	.....	52	W.....	60,000	110,000
2	Casket manufacturing.....	55	8	52	W.....	120,000	160,000
1	Cracker bakery.....	14	2	50	W.....	6,000	30,000
1	Engraving and stamping works.....	10	.....	50	W.....	1,500	4,000
1	Extension table works.....	50	.....	50	W.....	40,000	200,000
1	Force pump manufacturing.....	95	.....	50	W.....	200,000	400,000
1	Heater manufacturing.....	9	.....	52	W.....	30,000	30,000
2	Iron fence manufacturing.....	35	.....	52	W.....	90,000	170,000
	Iron fence manufacturing.....	30	2	52	2 M.....		
3	Iron foundries.....	110	.....	52	W.....	100,000	150,000
	Iron foundries.....	195	.....	52	2 M.....	85,000	243,000
1	Machine tool works.....	17	.....	25	W.....	6,000	24,000
5	Machine works.....	355	12	40	2 M.....	1,734,000	918,500
	Machine works.....	178	8	21	W.....		
	Machine works.....	17	.....	52	2 M.....		
	Machine works.....	7	2	52	W.....		
	Machine works.....	21	1	50	2 M.....	212,000	377,000
3	Malleable iron works.....	325	.....	50	2 M.....		
	Malleable iron works.....	175	.....	51	2 M.....		
	Malleable iron works.....	4	.....	52	W.....	800	1,000
1	Mechanics' co-operative works.....	10	.....	52	W.....		
13	Printing offices.....	89	29	52	2 M.....	371,800	403,000
	Printing offices.....	131	38	52	W.....		
4	Planing mills.....	6	.....	40	W.....	12,500	58,000
	Planing mills.....	39	.....	52	W.....		
1	Sewing machine manufacturing.....	177	.....	52	M.....	60,000	100,000
1	Steam laundry.....	4	.....	18	W.....	5,000	10,000

*Product of one firm alone.

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Springfield, Clarke County—Concluded.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
1	Tricycle manufactory	8	.....	51	W	\$60,000	\$125,000
2	Water wheel and engine manufactory....	98	.....	52	2 M.....	180,000	398,000
	Water wheel and engine manufactory	89	.....	50	2 M.....		
1	Warm air furnace manufactory.....	12	.....	45	W	10,000	15,000
	Blacksmiths..	25	.....	52	W .....	.....	.....
	Bricklayers.....	55	.....	38	W .....	.....	.....
	Clerks in stores	570	.....	52	W .....	.....	.....
	Carpenters	75	.....	45	2 M.....	.....	.....
	Dressmakers .....	.....	125	52	W .....	.....	.....
	Hod carriers	50	.....	45	2 M.....	.....	.....
	Plumbers	11	.....	45	W .....	.....	.....
	Plasterers	30	.....	38	W .....	.....	.....
	Painters.....	40	.....	40	W .....	.....	.....
	Street laborers	50	.....	38	2 M.....	.....	.....
	Stone masons.....	30	.....	40	2 M.....	.....	.....
	Tailors	40	.....	52	W .....	.....	.....
64	Total	6,268	239	.....	.....	\$7,515,690	\$6,088,000

Average number of weeks in operation, 47 24-55. Number of organized men, 1,700.

Wilmington, Clinton County.

1	Bridge works.....	25	.....	48	W	\$18,000	\$40,000
1	Flour mill.....	17	.....	50	W	40,000	150,000
4	Planing mills.....	11	.....	36	W	20,500	31,900
	Planing mills	3	.....	30	W		
	Planing mills	3	.....	35	W		
3	Printing offices.....	12	2	52	W	*	*
	Clerks in stores .....	.....	.....	.....	.....	.....	.....
	Dry goods stores	14	4	52	W .....	.....	.....
	Hardware stores	6	.....	52	W .....	.....	.....
	Grocery stores	10	3	52	W .....	.....	.....
	Drug stores.....	6	.....	52	W .....	.....	.....
	Clothing stores.....	5	.....	52	W .....	.....	.....
	Dressmakers .....	.....	6	52	Daily...	.....	.....
	Tailors	7	.....	52	W .....	.....	.....
	Painters.....	24	.....	45	2 M .....	.....	.....
	Tinners	4	.....	52	W .....	.....	.....
	Plasterers	6	.....	45	W .....	.....	.....
	Bricklayers.....	6	.....	38	W .....	.....	.....
	Carpenters	10	.....	40	W .....	.....	.....
	Stone masons	3	.....	45	W .....	.....	.....
	Hod carriers.....	4	.....	38	W .....	.....	.....
	Blacksmiths.....	8	.....	52	W .....	.....	.....
	Street laborers	4	.....	36	M .....	.....	.....
9	Total.....	188	15	.....	.....	\$78,500	\$221,900

Average number of weeks in operation, 45 3-11.

*Not given.

East Liverpool, Columbiana County.

3	Blacksmith and wagon shops.....	12	52	W	\$9,000	\$13,000
1	Foundry	6	52	2 M.....	2,000	10,000
5	Machine shops.....	30	52	2 M.....	20,000	60,000
4	Printing offices.....	20	52	W	12,000	15,000
8	Potteries	196	107	48	2 M.....	1,673,000	1,855,300
7	Potteries	826	222	50	2 M.....		
2	Potteries	144	23	49	2 M.....		
1	Pottery	43	12	44	2 M.....		
2	Potteries.....	151	64	46	2 M.....		
1	Pottery	30	8	42	2 M.....		
1	Pottery	10	18	52	2 M.....		
1	Pottery	17	4	45	2 M.....		
1	Pottery	15	4	35	2 M.....		

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

East Liverpool—Concluded.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
9	Shoemaker shops	13	.....	52	W	\$9,000	\$14,000
9	Tailor shops	13	10	34	W	12,000	30,000
	Clerks in stores	54	21	52	W .....	.....	.....
	Bricklayers	21	.....	38	W .....	.....	.....
	Day laborers	103	.....	40	W .....	.....	.....
	Hod carriers	25	.....	36	W .....	.....	.....
55	Totals	1,729	493	.....	.....	\$1,737,000	\$1,997,300

Average number of weeks in operation, 45 16-19. Number of organized men, 425.

Leetonia.

1	Boiler works	9	.....	52	W	5,000	5,000
3	Blast furnaces and rolling-mill	375	.....	52	2 M.....	350,000	900,000
1	Foundry	3	.....	52	2 M.....	1,500	2,500
1	Printing office	2	.....	52	W	1,000	1,500
1	Stove works	1	1	52	W	1,000	2,500
	Bricklayers	4	.....	38	W .....	.....	.....
	Plasterers	4	.....	38	W .....	.....	.....
	Painters	4	.....	40	W .....	.....	.....
	Stonemasons	3	.....	38	W .....	.....	.....
	Tailors	4	8	50	W .....	.....	.....
	Dressmakers .....	.....	22	52	W .....	.....	.....
	Clerks in stores	50	16	52	W .....	.....	.....
7	Totals	459	47	.....	.....	\$358,500	\$911,500

Average number of weeks in operation during the year, 47 1/8. Number of organized men, 200.

New Lisbon.

2	Carriage manufactories	{ 10	.....	52	W	18,000	19,000
		{ 10	.....	48	W		
1	Fire-clay manufactory	10	.....	40	M	15,000	30,000
1	Flour mill	4	.....	52	W	30,000	*
1	Lumber yard	50	.....	45	M	10,000	25,000
3	Printing offices	17	.....	52	W	10,500	9,500
1	Woolen mill	23	23	50	2 M.....	33,000	72,000
	Bricklayers	10	.....	36	W .....	.....	.....
	Blacksmiths	7	.....	52	W .....	.....	.....
	Clerks in stores	20	4	52	W .....	.....	.....
	Carpenters	20	.....	45	2 M.....	.....	.....
	Dressmakers .....	.....	8	52	W .....	.....	.....
	Hod carriers	5	.....	36	W .....	.....	.....
	Harness makers	12	.....	52	W .....	.....	.....
	Painters	15	.....	40	W .....	.....	.....
	Plasterers	5	.....	38	W .....	.....	.....
	Street laborers	25	.....	36	W .....	.....	.....
	Stonemasons	8	.....	40	W .....	.....	.....
	Tailors	6	.....	52	W .....	.....	.....
9	Totals	252	35	.....	.....	\$116,500	\$155,500

Average number of weeks in operation, 45 15-19. * Not given.

Salem.

1	Architectural iron works	125	.....	52	2 M.....	150,000	225,000
1	Canning works	5	5	50	2 M.....	10,000	20,000
1	Nail works	230	25	52	2 M.....	120,000	550,000
1	Organ works	37	.....	52	M	15,000	30,000
1	Sewer-pipe works	6	.....	52	W	12,000	.....
2	Stove works	{ 52	.....	47	2 M.....	45,000	85,000
		{ 6	.....	52	W		

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Salem—Concluded.

No. of establishments:	Industrial establishments.	Number of men em- ployed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital in- vested.	Value of annual pro- duct.
1	Printing office	5	4	52	W	\$3,000	\$4,200
1	Gas company	5	.....	52	M	18,000	20,000
1	Tool manufactory	175	1	50	2 M	150,000	175,000
	Street laborers	6	.....	38	W .....	.....	.....
	Bricklayers	26	.....	38	W .....	.....	.....
	Plasterers	18	.....	40	W .....	.....	.....
	Painters	24	.....	40	W .....	.....	.....
	Stonemasons	15	.....	45	W .....	.....	.....
	Carpenters	60	.....	40	W .....	.....	.....
	Hod carriers	9	.....	40	W .....	.....	.....
	Blacksmiths	16	.....	52	W .....	.....	.....
	Tailors	6	3	50	W .....	.....	.....
	Dressmakers .....	.....	56	52	W .....	.....	.....
	Plumbers	13	.....	52	W .....	.....	.....
	Clerks in stores	63	50	52	W .....	.....	.....
10	Totals	902	144	.....	.....	\$523,000	\$1,117,700

Average number of weeks in operation during year, 47 8-11. Number of organized men, 325.

Wellsville.

2	Brick works	{ 30	40	W	}	14,000	38,000
		{ 5	52	W			
1	Brick yard	5	52	W		2,000	2,000
1	Cooper shop	2	52	W		1,000	2,000
1	Cigar manufactory	7 2	52	W		500	1,500
2	Foundries	{ 10	52	M	}	20,000	35,000
		{ 9	52	W			
1	Flour mill	2	52	W		10,000	10,000
1	Machine shop	24	52	2 M		40,000	15,000
1	Natural gas company	270	35	W		*	*
1	Printing office	4 1	52	W		3,000	5,000
2	Potteries	{ 78 35	50	2 M	}	118,000	140,000
		{ 37 4	45	W			
1	Planing mill	10	30	W		30,000	35,000
1	Scrap iron dealer	6	52	W		10,000	100,000
2	Sewer-pipe manufactories	{ 10	52	M	}	50,500	40,600
		{ 54	50	2 M			
1	Tannery	5	52	W		2,000	2,000
1	Wagon works	2	52	W		1,000	5,000
1	Wood-turning works	45 7	52	W		30,000	60,000
	Bricklayers	9	36	W .....		.....	.....
	Plasterers	8	38	W .....		.....	.....
	Painters	7	40	W .....		.....	.....
	Stonemasons	6	40	W .....		.....	.....
	Carpenters	12	45	W .....		.....	.....
	Hod carriers	9	36	W .....		.....	.....
	Blacksmiths	10	52	W .....		.....	.....
	Tailors	8 12	52	W .....		.....	.....
	Dressmakers .....	..... 10	52	W .....		.....	.....
	Plumbers	2	52	W .....		.....	.....
	Clerks in stores	81 14	52	W .....		.....	.....
20	Totals	767 85	.....	.....		\$332,000	\$491,100

Average number of weeks in operation during year, 47 16-31. Number of organized men, 250.

Coshocton, Coshocton County.

2	Carriage works	{ { 19	52	W	}	7,000	23,000
		{ { 7	40	W			

* Not given.

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Coshocton—Concluded.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
2	Planing-mills	11	.....	40	2 M.....	\$12,000	\$20,000
2	Flour-mills.....	6	.....	52	W.....	} 40,000	85,000
	Flour-mills.....	7	.....	52	M.....		
1	Paper-mill	16	5	52	2 M.....	10,000	12,000
1	Foundry	3	.....	52	W.....	2,400	4,000
4	Printing offices	20	2	52	W.....	17,500	18,000
	Street laborers	9	.....	44	M.....	.....	.....
	Coopers	3	.....	52	W.....	.....	.....
	Bricklayers	5	.....	38	M.....	.....	.....
	Plasterers	4	.....	38	M.....	.....	.....
	Stonemasons.....	5	.....	38	W.....	.....	.....
	Tailors	15	15	52	W.....	.....	.....
	Dressmakers .....	.....	10	52	D.....	.....	.....
	Clerks in stores	39	14	52	W.....	.....	.....
12	Total	169	46	.....	.....	\$88,900	\$162,000

Average number of weeks in operation during the year, 47³/₈.

Roscoe.

1	Furniture factory	18	.....	52	W.....	*15,000	*20,000
2	Flour-mills	10	.....	52	W.....	} 53,000	80,000
	Flour-mills	2	.....	52	M.....		
1	Planing-mill	8	.....	52	W.....	5,000	10,000
1	Woolen-mill	5	3	52	W.....	1,500	15,600
	Bricklayers.....	6	.....	38	2 M.....	.....	.....
	Carpenters	3	.....	44	W.....	.....	.....
	Blacksmiths.....	2	.....	52	W.....	.....	.....
	Dressmakers .....	.....	3	52	D.....	.....	.....
5	Total	54	6	.....	.....	\$74,500	\$125,600

Average number of weeks in operation during the year, 49 5-9.

Bucyrus, Crawford County.

1	Brewery	8	.....	52	W.....	50,000	50,000
1	Creamery	8	.....	52	M.....	6,000	20,000
2	Copper kettle works	19	.....	52	W.....	30,000	45,000
2	Foundry and machine shops	143	.....	52	M.....	160,000	275,000
3	Flour-mills.....	6	.....	50	2 M.....	} 72,000	100,000
	Flour-mills.....	7	.....	52	W.....		
	Flour-mills.....	4	.....	45	W.....		
1	Knit goods manufactory	10	30	52	W.....	50,000	40,000
2	Plan'g-mills	85	.....	52	W.....	} 140,000	200,000
	Planing-mills	16	.....	50	2 M.....		
1	Plow works	10	.....	36	M.....	20,000	20,000
1	Woolen-mill.....	1	3	26	M.....	5,000	5,000
	Street laborers	8	.....	36	M.....	.....	.....
	Bricklayers	12	.....	36	M.....	.....	.....
	Plasterers	15	.....	38	M.....	.....	.....
	Painters	20	.....	40	M.....	.....	.....
	Stonemasons.....	6	.....	40	M.....	.....	.....
	Carpenters	50	.....	45	M.....	.....	.....
	Hod carriers	8	.....	36	M.....	.....	.....
	Blacksmiths	8	.....	52	M.....	.....	.....
	Tailors	22	32	52	M.....	.....	.....
	Dressmakers .....	.....	35	52	M.....	.....	.....
	Clerks in stores	58	17	52	M.....	.....	.....
14	Total	524	117	.....	.....	\$533,000	\$755,000

Average number of weeks in operation during the year, 45 15-23. Number of organized men, 85.

* Estimated.

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Crestline.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
2	Flour-mills.....	3	.....	52	W.....	\$30,000	\$49,000
	Flour-mills.....	4	1	40	M.....		
1	Planing-mill.....	14	1	50	M.....	18,000	24,000
	Street laborers.....	6	.....	36	W.....	.....	.....
	Bricklayers.....	3	.....	36	W.....	.....	.....
	Plasterers.....	3	.....	38	W.....	.....	.....
	Painters.....	8	.....	40	W.....	.....	.....
	Stonemasons.....	7	.....	40	W.....	.....	.....
	Carpenters.....	20	.....	45	2 M.....	.....	.....
	Hod-carriers.....	5	.....	36	W.....	.....	.....
	Blacksmiths.....	6	.....	52	W.....	.....	.....
	Tailors.....	7	10	52	W.....	.....	.....
	Dress-makers.....	.....	15	52	W.....	.....	.....
	Clerks in stores.....	.....	24	52	W.....	.....	.....
3	Total.....	86	51	.....	.....	\$48,000	\$73,000

Average number of weeks in operation during the year, 44 5-14. Number of organized men, 25.

Galion.

1	Flour-mill.....	15	.....	52	W.....	45,000	100,000
1	Furniture manufactory.....	18	.....	52	W.....	8,000	50,000
1	Machine shop.....	15	.....	52	W.....	15,000	25,000
1	Planing-mill.....	32	.....	52	W.....	30,000	75,000
1	Printing office.....	4	.....	52	W.....	3,500	3,900
1	Wheel manufactory.....	96	.....	52	2 M.....	80,000	120,000
	Street laborers.....	6	.....	36	W.....	.....	.....
	Bricklayers.....	4	.....	36	W.....	.....	.....
	Plasterers.....	10	.....	48	W.....	.....	.....
	Painters.....	12	.....	40	W.....	.....	.....
	Stonemasons.....	16	.....	40	W.....	.....	.....
	Carpenters.....	30	.....	45	W.....	.....	.....
	Hod-carriers.....	5	.....	36	W.....	.....	.....
	Blacksmiths.....	17	.....	52	W.....	.....	.....
	Tailors.....	9	12	52	W.....	.....	.....
	Dressmakers.....	.....	20	52	W.....	.....	.....
	Clerks in stores.....	40	3	52	W.....	.....	.....
6	Total.....	329	35	.....	.....	\$181,500	\$373,900

Average number of weeks in operation during the year, 46 9-17. Number of organized men, 125.

Chagrin Falls, Cuyahoga County.

1	Handle factory.....	18	.....	52	2 M.....	24,100	25,000
1	Iron goods manufactory.....	40	1	48	W.....	45,000	50,000
1	Printing office.....	4	.....	52	W.....	4,000	5,000
1	Paper manufactory.....	34	4	48	W.....	65,000	120,000
1	Wooden-ware manufactory.....	6	.....	52	W.....	10,000	8,000
	Street laborers.....	6	.....	36	W.....	.....	.....
	Bricklayers.....	3	.....	36	W.....	.....	.....
	Plasterers.....	4	.....	48	W.....	.....	.....
	Painters.....	6	.....	40	W.....	.....	.....
	Stonemasons.....	5	.....	40	W.....	.....	.....
	Carpenters.....	7	.....	45	2 M.....	.....	.....
	Blacksmiths.....	7	.....	52	W.....	.....	.....
	Tailors.....	1	.....	52	W.....	.....	.....
	Dressmakers.....	.....	8	52	D.....	.....	.....
	Clerks in stores.....	12	8	52	W.....	.....	.....
5	Total.....	153	21	.....	.....	\$148,100	\$208,000

Average number of weeks in operation during the year, 46 1/3.

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Cleveland.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
1	Awning manufactory.....	98	.....	52	W.....	\$5,000	\$10,000
2	Acid manufactories.....	90	.....	52	2 M.....	490,000	600,000
5	Bakeries.....	158	49	52	W.....	20,000	90,000
17	Breweries.....	366	.....	52	W.....	1,750,000	2,178,000
4	Brass foundries.....	389	.....	52	W.....	267,500	374,000
2	Broom manufactories.....	36	.....	52	M.....	100,000	50,000
6	Brick manufactories.....	18	.....	26	W.....	95,000	205,000
	Brick manufactories.....	18	.....	26	2 M.....		
	Brick manufactories.....	158	.....	40	2 M.....		
113	Blacksmith shops.....	606	.....	52	W.....	37,000	485,000
4	Box manufactories.....	601	15	50	2 M.....	951,000	1,150,000
	Box manufactories.....	205	.....	50	M.....		
5	Boiler works.....	40	.....	52	W.....	75,000	180,000
	Boiler works.....	75	.....	52	M.....		
	Boiler works.....	80	.....	52	2 M.....		
10	Cloak and clothing manufactories.....	336	360	40	W.....	1,243,000	3,240,000
	Cloak and clothing manufactories.....	12	64	52	W.....		
	Cloak and clothing manufactories.....	51	110	44	W.....		
	Cloak and clothing manufactories.....	80	275	48	W.....		
	Cloak and clothing manufactories.....	44	77	35	W.....	8,500	23,300
3	Chewing gum manufactories.....	46	85	50	W.....		
2	Carbon works.....	90	1	44	2 W.....	438,000	525,000
	Carbon works.....	240	.....	52	2 W.....		
2	Chain manufactories.....	24	.....	52	2 M.....	85,000	20,000
3	Candle manufactories.....	87	2	52	W.....	12,000	150,000
1	Can manufactory.....	62	.....	52	2 M.....	20,000	75,000
23	Carriage manufactories.....	177	.....	52	W.....	255,000	450,000
	Carriage manufactories.....	183	.....	52	M.....		
	Carriage manufactories.....	147	.....	48	2 M.....		
4	Cooper shops.....	135	.....	49	W.....	40,000	46,000
	Cooper shops.....	81	.....	35	2 M.....	5,000	20,000
1	Door-knob manufactory.....	20	20	52	2 M.....	20,000	75,000
7	Engine and ship builders.....	999	.....	52	W.....	119,000	1,400,000
	Engine and ship builders.....	122	.....	48	W.....		
	Engine and ship builders.....	125	.....	42	W.....		
14	Foundries.....	1,390	.....	52	2 M.....	1,355,000	3,405,000
	Foundries.....	279	.....	40	W.....		
	Foundries.....	55	.....	33	2 M.....		
4	Furniture manufactories.....	197	6	52	M.....	104,000	212,000
1	Flagging works.....	30	.....	34	M.....	20,000	10,000
6	Fishing tackle manufactories.....	75	6	42	W.....	5,000	10,000
	Fishing tackle manufactories.....	183	25	36	W.....	110,000	105,000
4	Flour-mills.....	113	2	52	W.....	475,000	2,751,000
1	Fertilizer manufactory.....	100	.....	52	W.....	100,000	250,000
1	Furnace manufactory.....	28	.....	25	W.....	20,000	50,000
1	Gas and coke works.....	50	.....	52	M.....	500,000	1,000,000
2	Lith-graghers.....	52	2	52	W.....	50,000	150,000
1	Leather manufactory.....	15	.....	52	W.....	75,000	100,000
1	Lamp manufactory.....	112	.....	52	M.....	100,000	100,000
15	Lumber dealers.....	1,327	.....	52	W.....	200,000	*2 500,000
1	Lighting company.....	600	.....	52	2 M.....	2,000,000	*1
2	Marble works.....	71	.....	52	W.....	155,000	275,000
	Marble works.....	5	.....	52	M.....		
28	Machinery manufactories.....	71	3	52	W.....	782,500	837,000
	Machinery manufactories.....	393	.....	52	2 M.....		
	Machinery manufactories.....	395	4	52	M.....		
2	Navigation company.....	15	1	34	M.....	250,000	60,000
	Navigation company.....	25	.....	34	W.....		
1	Nickle-platers and polishers.....	14	5	52	2 M.....	5,000	10,000
6	Nut and washer manufactories.....	129	20	52	W.....	580,000	1,555,000
	Nut and washer manufactories.....	370	.....	52	2 M.....		
16	Oil works.....	2,530	3	50	W.....	4,255,000	17,235,000
25	Printing offices.....	721	60	52	W.....	318,000	357,000
2	Pump manufactories.....	59	.....	50	W.....	50,000	145,000
4	Planing-mills.....	290	2	52	W.....	320,000	558,000
	Planing-mills.....	55	.....	52	2 M.....		

*1 Not given. *2 All but one firm do a commission business.

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Cleveland—Concluded.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
2	Pipe manufactories.....	60	.....	52	2 M.....	\$230,000	\$240,000
	Pipe manufactories.....	9	.....	28	W.....		
2	Railroad shops.....	440	.....	52	M.....	500,000	500,000
2	Rolling-mills.....	360	.....	46	2 M.....	4,425,000	6,600,000
	Rolling mills.....	3,350	.....	45	M.....		
1	Steel and shovel manufactory.....	72	.....	48	M.....	100,000	200,000
14	Stove foundries.....	200	.....	50	2 M...	528,000	478,000
	Stove foundries.....	70	.....	52	W.....		
	Stove foundries.....	31	.....	51	W.....		
	Stove foundries.....	6	.....	52	2 M.....		
4	Soan manufactories.....	616	.....	52	W.....	60,000	125,000
1	Sand works.....	22	.....	40	W.....	10,000	20,000
1	Shirt manufactory.....	2	55	52	W.....	6,000	17,000
5	Sewing machine manufactories.....	1,104	5	50	2 M.....	1,200,000	1,000,000
2	Show-case manufactories.....	60	.....	52	W.....	30,000	45,000
1	Spring manufactory.....	125	.....	48	2 M.....	135,000	285,000
1	Trunk manufactory.....	70	2	52	W.....	65,000	100,000
4	Tanneries.....	60	.....	50	W.....	100,000	200,000
8	Tin, sheet-iron and copper manufactories	321	20	52	W.....	6,000	20,000
4	Tool manufactories.....	107	.....	37	W.....	160,000	291,000
	Tool manufactories.....	56	.....	52	W.....		
1	Target manufactory.....	20	18	52	2 M.....	25,000	75,000
2	Tobacco and cigar manufactories.....	415	150	51	W.....	339,600	989,890
2	Woolen-mills.....	119	465	52	M.....	475,000	700,000
3	Wash-board manufactories.....	86	.....	52	2 M.....	105,000	360,000
5	Wire mills.....	1,220	20	48	2 M.....	1,445,000	2,400,000
13	White lead manufactories.....	531	.....	52	W.....	200,000	400,000
1	Window glass manufactory.....	29	.....	52	W.....	*	*
	Clerks in stores.....	693	.....	52	W.....	.....	.....
	Dress-makers and apprentices.....	.....	765	50	W.....	.....	.....
432	Total.....	26,002	2,697	.....	.....	\$28,020,100	\$56,067,190
Average number of weeks in operation, 47 89-96. Number of organized men, 6,795.							

* Not given.

Greenville, Darke County.

1	Flour-mill.....	4	.....	52	W.....	20,000	70,000
1	Planing-mill.....	15	.....	52	W.....	2,500	3,000
1	Saw-mill.....	6	.....	32	W.....	4,500	5,000
1	Wagon manufactory.....	33	.....	52	W.....	15,000	20,000
4	Total.....	58	.....	.....	.....	\$42,000	\$98,000

Average number of weeks in operation, 47.

Defiance, Defiance County.

1	Brewery.....	13	.....	52	W.....	30,000	33,000
1	Box and barrel manufactory.....	35	.....	35	W.....	15,000	40,000
3	Carriage manufactories.....	10	.....	52	W.....	49,000	45,000
	Carriage manufactories.....	20	.....	52	2 M.....		
	Carriage manufactories.....	10	.....	40	W.....	85,000	288,000
1	Cigar manufactory.....	2	2	52	W.....		
1	Furniture manufactory.....	35	1	52	W.....	15,000	25,000
2	Flouring-mills.....	16	.....	52	M.....	100,000	150,000
	Flouring-mills.....	14	.....	52	W.....		
1	Machine manufactory.....	150	1	52	M.....	100,000	150,000
1	Pail factory.....	55	3	50	W.....	25,000	50,000
2	Planing-mills.....	38	.....	52	W.....	70,000	170,000
	Planing-mill.....	22	.....	52	W.....		
1	Paper-mill.....	17	8	52	M.....	50,000	40,000

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Defiance—Concluded.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
3	Printing offices.....	4	1	52	M.....	\$30,500	\$26,000
	Printing office.....	6	2	52	M.....		
	Printing office.....	3		52	W.....		
1	Saw mill.....	12		52	W.....	10,000	15,000
4	Stave and hoop manufactories.....	35		35	M.....	57,000	120,000
	Stave and hoop manufactories.....	50		52	W.....		
	Stave and hoop manufactories.....	25		52	2 M.....		
	Stave and hoop manufactories.....	50		51	2 M.....		
1	Woolen mill.....	10	60	52	W.....	50,000	70,000
1	Wagon manufactory.....	175		52	2 M.....	285,000	220,000
	Clerks in stores.....	113	65	52	W.....		
24	Total.....	920	143			\$872,500	\$1,294,000

Average number of weeks in operation, 50 1-25.

Delaware, Delaware County.

2	Breweries.....	12		52	W.....	25,000	30,000
2	Blacksmith shops.....	5		52	W.....	2,000	2,500
1	Box manufactory.....	3	7	52	W.....	6,000	12,000
3	Cigar manufactories.....	13	2	52	W.....	87,000	152,000
	Cigar manufactories.....	9	1	52	2 M.....		
	Cigar manufactories.....	39	51	52	W.....		
1	Carriage manufactory.....	5	1	52	W.....	3,000	5,000
1	Cooper shop.....	5		52	W.....	1,000	5,000
1	Chair manufactory.....	110	21	52	2 M.....	150,000	150,000
1	Elevator.....	8		52	W.....	45,000	125,000
1	Flour mill.....	4		52	W.....	5,500	7,000
1	Gas works.....	6		52	2 M.....	78,000	*
1	Laundry.....	4	3	52	W.....	5,000	4,500
1	Printing office.....	4		52	W.....	6,000	*
1	Paper mill.....	55	25	52	M.....	100,000	100,000
2	Planing mills.....	15		51	W.....	21,000	47,000
1	Railroad shop.....	140		52	W.....	10,000	*
1	Saw mill.....	6		52	W.....	1,000	5,000
1	Stove foundry.....	6		45	W.....	5,000	2,500
22	Total.....	449	111			\$550,000	\$647,500

Average number of weeks in operation, 51 11-19. No. of organized men, 125.

*Not given.

Sandusky, Erie County.

2	Boiler works.....	25		52	M.....	230,000	243,000
	Boiler works.....	4		52	W.....		
2	Breweries.....	39		52	M.....	210,000	235,000
2	Carriage manufactories.....	15		52	W.....	25,000	15,500
1	Cigar box manufactory.....	7	15	52	2 M.....	8,000	12,000
1	Chemical works.....	20		52	W.....	75,000	75,000
1	Crayon manufactory.....	20	6	40	M.....	25,000	20,000
2	Coal companies.....	10		36	M.....	41,000	110,000
	Coal companies.....	10		52	W.....		
2	Cigar factories.....	24		52	W.....	5,500	13,000
4	Cooper shops.....	123		52	W.....	117,000	76,500
	Cooper shops.....	80		35	M.....		
1	Elevator company.....	2		52	M.....	5,000	20,000
2	Foundry and machine shops.....	183		52	W.....	275,000	341,000
	Foundry and machine shop.....	30		35	W.....		
2	Flour mills.....	18		52	W.....	52,000	75,000
8	Fish dealers.....	340		26	W.....	250,000	380,000
	Fish dealers.....	125		40	W.....		
1	Hoop company.....	30	1	35	M.....	20,000	30,000
1	Head iron company.....	18		52	M.....	16,000	40,000

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Sandusky—Concluded.

No of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
10	Ice companies	377	.....	52	W	\$332,000	\$473,00
5	Lime quarries.....	25	.....	52	W	176,000	210,000
	Lime quarries	10	.....	50	M		
	Lime quarries.....	40	.....	52	M		
	Lime quarries.....	40	.....	40	W		
1	Paper mill company.....	17	4	52	2 M.....	18,000	25,000
3	Printing companies.....	60	3	52	W	60,000	135,000
5	Planing mills.....	66	.....	52	W	253,000	370,000
	Planing mills.....	46	.....	52	M		
	Planing mills.....	102	.....	50	2 M.....		
2	Railroad shops.....	288	1	52	M	55,000	60,000
1	Water works.....	9	.....	52	M	375,000	400,000
2	Wheel companies.....	250	.....	48	2 M.....	300,000	450,000
	Wheel companies.....	125	.....	52	2 M.....		
5	Wine manufactories	21	.....	52	M	230,000	243,000
	Wine manufactories	4	.....	52	W		
1	Wooden ware manufactory.....	8	.....	52	W	1,500	5,000
	Bookkeepers.....	56	.....	52	M .....	.....	.....
	Street laborers.....	50	.....	36	W .....	.....	.....
	Bricklayers.....	20	.....	36	W .....	.....	.....
	Plasterers	25	.....	38	W .....	.....	.....
	Painters.....	30	.....	40	W .....	.....	.....
	Stone masons.....	21	.....	40	W .....	.....	.....
	Carpenters	26	.....	45	2 M.....	.....	.....
	Hod carriers.....	25	.....	36	W .....	.....	.....
	Blacksmiths.....	18	.....	52	W .....	.....	.....
	Tailors	20	.....	52	W .....	.....	.....
	Dressmakers .....	.....	50	52	D .....	.....	.....
	Plumbers	8	.....	52	W .....	.....	.....
	Clerks in stores	125	60	52	W .....	.....	.....
67	Total	3,035	140	.....	.....	\$3,155,000	\$4,057,000

Average number of weeks in operation, 47 2-5. Number of organized men, 1,200.

Lancaster, Fairfield County.

2	Agricultural implements manufactories	207	.....	52	2 M.....	125,000	265,000
1	Brewery	12	.....	52	W	75,000	85,000
1	Carriage manufactory	7	.....	52	W	2,500	4,000
5	Merchant tailors.....	70	190	52	2 M.....	72,000	240,000
2	Planing mills	4	.....	35	W	24,000	35,000
	Planing mills	12	.....	40	W		
3	Printing offices.....	24	.....	52	W	33,000	19,500
1	Railroad shop.....	136	.....	52	M .....	.....	.....
1	Steam laundry.....	2	5	52	W	2,000	3,000
3	Woolen mills.....	8	.....	25	M	23,000	56,000
	Woolen mill.....	3	.....	26	W		
	Woolen mill.....	4	.....	52	W		
	Blacksmiths.....	9	.....	52	2 M.....	.....	.....
	Bricklayers	7	.....	38	W .....	.....	.....
	Carpenters	17	.....	42	W .....	.....	.....
	Clerks in stores.....	40	.....	52	W .....	.....	.....
	Dressmakers.....	.....	8	50	W .....	.....	.....
	Hod carriers	8	.....	38	W .....	.....	.....
	Painters	21	.....	40	W .....	.....	.....
	Plasterers	8	.....	38	W .....	.....	.....
	Plumbers.....	2	.....	38	W .....	.....	.....
	Stone masons	9	.....	38	W .....	.....	.....
	Street laborers.....	9	.....	40	W .....	.....	.....
19	Total.....	619	203	.....	.....	\$356,500	\$657,500

Average number of weeks in operation during the year, 43 19-23.

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Washington C. H., Fayette County

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
2	Carriage works	18	.....	52	W.....	\$8,000	\$25,000
2	Elevators	8	.....	52	W.....	6,000	54,000
2	Flour-mills	35	.....	48	W.....	50,000	200,000
1	Foundry	12	.....	52	W.....	5,000	50,000
1	Planing-mill	9	.....	52	W.....	15,000	75,000
3	Printing offices	22	.....	52	W.....	16,000	37,000
1	Soap factory	13	3	52	W.....	50,000	75,000
1	Shoe factory	9	1	52	W.....	20,000	15,000
	Bricklayer	14	.....	38	W.....	.....	.....
	Blacksmiths	24	.....	52	W.....	.....	.....
	Carpenters	22	.....	45	W.....	.....	.....
	Clerks in stores	175	.....	52	W.....	.....	.....
	Dressmakers .....	.....	30	52	W.....	.....	.....
	Hod-carriers	20	.....	38	2 M.....	.....	.....
	Plaster rs	12	.....	45	W.....	.....	.....
	Painters	55	.....	45	W.....	.....	.....
	Street laborers	40	.....	38	W.....	.....	.....
	Stonemasons	9	.....	38	W.....	.....	.....
	Tailors	20	.....	52	W.....	.....	.....
13	Total	517	34	.....	.....	\$170,000	\$531,000

Average number of weeks in operation, 47 14-19.

Columbus, Franklin County.

4	Air furnace manufactories	48	1	52	W.....	28,000	60,000
1	Agricultural implement manufactory	120	.....	52	*	*	*
1	Bolt works	100	.....	52	2 M.....	60,000	150,000
3	Boiler manufactories	55	.....	52	W.....	50,000	48,000
1	Blast furnace	93	.....	52	M.....	75,000	360,000
1	Bridge manufactory	31	.....	50	M.....	75,000	360,000
1	Blank book manufactory	30	16	52	W.....	50,000	65,000
5	Book binderies	20	5	52	W.....	11,000	18,000
5	Brick manufactories	100	.....	50	2 M.....	108,000	100,000
1	Badge and regalia manufactory	172	289	52	W.....	300,000	700,000
5	Brass foundries	44	.....	50	W.....	} 76,000	202,000
	Brass foundries	37	.....	52	2 M.....		
4	Basket manufactories	12	.....	50	W.....	6,000	18,000
8	Broom manufactories	135	6	50	W.....	90,000	195,000
1	Box manufactory .....	.....	5	52	M.....	1,000	3,000
3	Breweries	154	.....	52	M.....	850,000	582,722
11	Crucible and slating works	107	.....	50	W.....	42,000	160,000
1	Cement works	15	.....	52	M.....	2,500	8,000
54	Contractors and builders	35	.....	48	M.....	} 269,000	780,000
	Contractors and builders	261	.....	45	2 M.....		
	Contractors and builders	579	.....	50	W.....		
50	Cigar manufactories	181	694	52	W.....	50,000	147,000
4	Candy manufactories	75	36	52	W.....	55,500	208,000
3	Coffee and spice mills	55	24	50	2 M.....	65,000	100,000
3	Chemical manufactories	20	.....	52	W.....	40,000	25,000
18	Carriage and wagon manufactories	143	.....	52	W.....	} 1,240,800	2,265,000
	Carriage and wagon manufactories	10	10	8	W.....		
	Carriage and wagon manufactories	941	44	51	2 M.....		
	Carriage and wagon manufactories	16	.....	35	2 M.....		
	Carriage and wagon manufactories	163	3	52	2 M.....		
	Carriage and wagon manufactories	40	3	52	M.....		
1	Cinnamon works	3	.....	52	W.....	3,000	10,000
2	Elevator manufactories	108	.....	52	M.....	} 68,000	110,000
	Elevator manufactories	11	.....	52	2 M.....		
4	Express companies	64	.....	52	W.....	†	†
1	Elevator	5	.....	52	W.....	10,000	20,000
2	Fence manufactories	16	.....	52	W.....	11,000	20,000
1	Fire-clay manufactory	45	.....	40	M.....	75,000	60,000

* Convicts.

† Not given.

NOTE.—The statistics of Columbus were taken by or under the direct supervision of the Commissioner of Labor. They include every thing but the railroad and street railway employes. No attention is paid, of course, to the employes in the public institutions that go to make up a considerable number in the aggregate. The number of clerks in stores and the wages they receive are carefully estimated, but independent of all this there are 12,872 wage-workers, of whom 2,659 are women and girls, and 720 boys. It will thus be seen that more than one-third of those engaged in gainful occupations in this city are women, girls and boys. This is, of course, exclusive of clerks in stores, where but a small proportion are men. It is also exclusive of the railway employes, who are nearly all men. There are 4,279 persons connected with the labor organizations of Columbus, divided as follows:

Knights of Labor.....	3,200
Tailors	100
Printers (German and English)	172
Cigarmakers	37
Carpenters	40
Lathers	25
Moulders.....	70
Bakers	50
Painters and paper-hangers	35
Stonecutters	55
Railway conductors	45
Railway brakemen	100
Railway firemen.....	100
Locomotive engineers	75
Switchmen	175

8,583,200 dollars are invested in the employment of labor, which is independent of the railroads and street railways, and the product of the industries of the city, independent of the industries above mentioned, is \$14,910,585. Nine-tenths of the printers belong to the I. T. U. Nearly all the moulders to the Moulders' Union. The Tailors' Union was organized in the fall of 1881, and is a strong conservative body of wage-workers. During the seven years of its existence it has advanced wages in the city 33 per cent. The beneficial results of labor organizations is probably as well illustrated by the returns from this city as from any place in Ohio.

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Wauseon, Fulton County.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
1	Flour mill.....	15	.....	52	W.....	\$45,000	\$150,000
1	Planing mill	10	.....	52	W.....	15,000	15,000
2	Printing offices.....	9	.....	52	W.....	7,500	8,500
	Bricklayers.....	3	.....	38	W.....		
	Blacksmiths.....	6	.....	52	W.....		
	Clerks in stores.....	40	4	52	W.....		
	Carpenters	10	.....	40	W.....		
	Dress-makers.....		7	52	W.....		
	Plasterers	5	.....	38	W.....		
	Painters	4	.....	45	W.....		
	Stone masons.....	3	.....	40	W.....		
	Tailors	5	.....	50	W.....		
4	Totals	110	11			\$67,500	\$173,500

Average number of weeks in operation, 46 11-12.

Gallipolis, Gallia County.

3	Brick manufactories.....	23	.....	52	W.....	7,500	13,00
	Brick manufacturer.....	10	.....	40	W.....	3,000	7,00
1	Brewery	2	.....	52	W.....	6,000	14,
2	Broom manufactories.....	24	.....	52	W.....	7,800	22

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.
Gallipolis, Gallia County—Concluded.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
4	Cigar factories	19	.....	52	W.....	\$10,150	\$8,800
1	Creamery	4	.....	40	W.....	5,000	10,000
1	Carriage manufactory	4	.....	52	W.....	1,000	2,000
4	Flour mills.....	23	.....	52	W.....	21,100	79,000
1	Flour mill	5	.....	2	W.....	4,000	*
1	Furniture manufactory.....	158	.....	50	W.....	78,000	125,000
1	Machine shop.....	24	.....	52	W.....	45,000	30,000
1	Marble works	5	.....	52	M.....	500	3,500
2	Printing offices.....	9	2	52	M.....	14,000	10,500
1	Planing mill	27	.....	40	W.....	10,000	60,000
2	Stove foundries.....	38	.....	45	W.....	40,000	35,000
1	Tannery.....	13	.....	52	W.....	24,000	28,000
	Bricklayers.....	12	.....	38	W.....	.....	.....
	Blacksmiths	14	.....	52	W.....	.....	.....
	Clerks in stores	75	20	52	W.....	.....	.....
	Carpenters	20	.....	38	2 M.....	.....	.....
	Dressmakers .....	.....	15	52	W.....	.....	.....
	Hod carriers.....	12	.....	40	W.....	.....	.....
	Plumbers	4	.....	40	W.....	.....	.....
	Painters	15	.....	45	W.....	.....	.....
	Plasterers	12	.....	40	W.....	.....	.....
	Stone masons.....	9	.....	38	W.....	.....	.....
	Street laborers.....	20	.....	38	W.....	.....	.....
	Tailors	13	.....	52	W.....	.....	.....
26	Totals	594	37	.....	.....	\$277,050	\$547,800

Average number of weeks in operation, 45 1-14. Number of organized men, 25.

* Only run two weeks

Xenia, Greene County.

1	Brewery	4	.....	52	W.....	10,000	20,000
1	Contractor	10	.....	40	W.....	5,000	15,000
		131	23	48	W.....	385,000	1,125,000
3	Cordage manufactories.....	117	27	40	2 M.....		
		100	75	50	2 M.....		
7	Cigar manufactories	24	2	52	W.....	3,000	12,200
1	Elevator.....	3	.....	52	W.....	6,000	11,000
1	Flour mill.....	3	.....	52	W.....	10,000	4,000
1	Paper mill	35	.....	52	W.....	60,000	50,000
3	Printing offices.....	24	10	52	W.....	31,000	35,000
2	Planing mills	21	.....	52	2 M.....	5,500	28,000
1	Railroad shop	55	.....	52	M.....	.....	.....
2	Saw mills	28	1	52	W.....	19,000	40,000
	Bricklayers.....	15	.....	38	W.....	.....	.....
	Blacksmiths	10	.....	52	W.....	.....	.....
	Clerks in stores	75	14	52	W.....	.....	.....
	Carpenters	15	.....	50	W.....	.....	.....
	Dressmakers .....	.....	14	52	W.....	.....	.....
	Hod carriers	44	.....	38	W.....	.....	.....
	Painters	16	.....	50	W.....	.....	.....
	Plasterers	14	.....	38	W.....	.....	.....
	Plumbers.....	3	.....	45	W.....	.....	.....
	Street laborers	30	.....	48	W.....	.....	.....
	Stone masons	12	.....	38	W.....	.....	.....
	Tailors	13	.....	50	W.....	.....	.....
28	Totals	802	166	.....	.....	\$534,500	\$1,344,200

Average number of weeks in operation, 47 22-25. Number of organized men, 100.

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Cambridge, Guernsey County.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
2	Cigar factories.....	6	1	52	M.....	\$2,700	\$13,500
	Cigar factories.....	3	2	52	W.....		
3	Carriage manufactories.....	21	.....	52	W.....	8,300	22,000
1	Chair manufactory.....	45	35	52	W.....	51,000	75,000
1	Flour-mill.....	6	.....	52	W.....	20,000	30,000
1	Planing-mill.....	28	.....	46	W.....	15,000	40,000
2	Printing offices.....	9	1	52	W.....	8,000	10,000
1	Roofing works.....	23	.....	52	W.....	16,000	100,000
1	Railroad shop.....	67	.....	52	M.....	*	*
1	Tannery.....	8	.....	48	W.....	9,000	10,000
	Bricklayers.....	6	.....	40	W.....	.....	.....
	Blacksmiths.....	9	.....	52	W.....	.....	.....
	Clerks in stores.....	22	10	52	W.....	.....	.....
	Carpenters.....	8	.....	45	2 M.....	.....	.....
	Dress-makers.....	.....	12	52	W.....	.....	.....
	Hod carriers.....	8	.....	40	W.....	.....	.....
	Painters.....	7	.....	45	W.....	.....	.....
	Plasterers.....	8	.....	38	W.....	.....	.....
	Plumbers.....	2	.....	40	W.....	.....	.....
	Street laborers.....	5	.....	38	2 M.....	.....	.....
	Stonemasons.....	5	.....	40	W.....	.....	.....
	Section men.....	20	.....	52	M.....	.....	.....
	Tailors.....	7	.....	52	W.....	.....	.....
13	Total.....	323	61	.....	.....	\$130,000	\$300,500

Average number of weeks in operation, 47 15-23.

Quaker City.

1	Cigar manufactory.....	11	3	52	W.....	8,000	6,300
1	Glass works.....	67	.....	43	W.....	60,000	75,000
1	Planing-mill.....	8	.....	52	W.....	15,000	12,000
3	Total.....	86	3	.....	.....	\$83,000	\$93,300

Average number of weeks in operation during the year, 49.

Cincinnati, Hamilton County.

5	Agricultural implement manufactories...	400	.....	48	W.....	333,000	400,000
5	Architectural iron works.....	336	.....	52	W.....	274,800	628,000
2	Axle grease and pitch manufactories.....	30	2	52	W.....	70,000	130,000
14	Bristle works.....	140	48	51	W.....	100,000	215,000
2	Bung manufactories.....	108	.....	50	W.....	150,000	190,625
32	Box manufactories.....	111	125	40	W.....	450,000	800,000
	Box manufactories.....	391	189	52	W.....		
2	Batting and wadding-mills.....	120	.....	52	W.....	575,000	725,000
	Batting and wadding-mills.....	54	206	52	2 M.....		
548	Boot and shoe manufactories.....	1,494	854	52	W.....	2,425,000	5,850,000
	Boot and shoe manufactories.....	1,404	890	50	W.....		
	Boot and shoe manufactories.....	75	42	48	W.....		
	Boot and shoe manufactories.....	180	50	40	W.....		
38	Brick and tile manufactories.....	420	.....	45	W.....	368,000	568,000
	Brick and tile manufactories.....	228	.....	52	W.....		
305	Bakeries.....	1,374	214	50	W.....	1,617,000	3,787,831
	Bakeries.....	96	15	52	W.....		
7	Boiler and tank manufactories.....	96	.....	52	W.....	185,000	375,000
	Boiler and tank manufactories.....	40	.....	52	2 M.....		
	Boiler and tank manufactories.....	28	.....	48	W.....		
1	Baby cab and hobby horse manufactory	125	30	50	W.....	100,000	175,000
16	Bell and brass foundries.....	404	.....	52	W.....	180,000	217,400
1	Bellows manufactory.....	14	.....	50	W.....	21,000	17,000
175	Blacksmith shops.....	425	.....	40	W.....	*	*
	Blacksmith shops.....	582	.....	52	W.....		

* Not given.

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.
Cincinnati—Continued.

No. of establishments.	Industrial establishments.	Number of men em- ployed.	Number of women em- ployed.	Number of weeks in operation during the year.	w often paid.	Amount of capital invest d.	Value of annual pro- duct.
8	Broom manufactories.....	92	15	52	W.....	\$28,500	\$140,000
10	Binderies and blank book manufactories	306	210	52	W.....	290,000	320,000
30	Breweries	1,124	.....	52	W.....	2,045,000	7,082,000
	Breweries	85	.....	52	2 M.....		
5	Canning works.....	325	200	52	W.....	200,000	500,000
28	Coloring establishments.. ..	225	52	52	W.....	225,000	200,000
1	City water-works.....	356	...	52	W.....	*	*
68	Carriage and wagon manufactories.....	820	122	50	W.....	4,500,000	8,840,000
	Carriage and wagon manufactories.....	734	136	40	W.....		
	Carriage and wagon manufactories.....	370	110	38	W.....		
	Carriage and wagon manufactories.....	501	105	48	W.....		
	Carriage and wagon manufactories.....	462	36	45	W.....		
	Carriage and wagon manufactories.....	1,699	66	52	W.....		
7	Cordage manufactories.....	114	46	44	W.....	175,000	350,000
	Cordage manufactories.....	72	32	52	W.....		
18	Cloak and mantle manufactories	426	1,422	52	W.....	450,000	1,500,000
	Cloak and mantle manufactories.....	18	120	39	W.....		
	Cloak and mantle manufactories.....	48	388	36	W.....		
	Cloak and mantle manufactories.....	36	570	26	W.....		
22	Candy manufactories.....	194	242	52	W.....	300,000	1,000,000
390	Clothing manufactories.....	3,767	905	52	W.....	7,300,000	17,000,000
8	Coffin manufactories.....	602	146	52	W.....	934,000	1,500,000
1	Composition ruffing manufactory.....	9	.....	35	W.....	10,000	10,000
4	Coal and coke companies	203	1	52	W.....	440,000	622,642
419	Cigar factories.....	453	124	52	W.....	1,500,000	2,225,000
	Cigar factories.....	380	298	50	W.....		
	Cigar factories.....	412	125	40	W.....		
	Cigar factories.....	231	85	51	W.....		
	Cigar factories.....	325	125	48	W.....		
48	Cooper shops.....	1,165	.....	52	W.....	300,000	1,000,000
1	Coal hod manufactory.....	58	.....	26	W.....	100,000	100,000
20	Carpet weavers.....	42	25	50	W.....	16,000	41,500
1	Drill manufactory.....	19	.....	52	W.....	19,800	30,000
9	Distilleries	320	.....	52	W.....	2,325,000	5,724,684
5	Drugs, glycerine manufactories.....	80	50	52	W.....	700,000	800,000
1	Directory office	52	.....	52	W.....	8,000	20,000
9	Elevator manufactories.....	391	1	52	W.....	602,000	1,008,000
22	Engraving works.....	154	.....	52	W.....	33,000	132,000
2	Engine manufactories.....	52	.....	52	W.....	95,000	145,000
1	Electric light company.....	35	.....	52	W.....	150,000	60,000
3	Forging works.....	60	.....	52	W.....	18,000	30,000
19	Foundries and stove works.....	481	.....	43	W.....	1,539,000	1,481,000
	Foundries and stove works.....	189	.....	50	W.....		
	Foundries and stove works.....	786	.....	52	W.....		
	Foundries and stove works.....	135	.....	45	W.....		
	Foundries and stove works.....	131	.....	30	2 M.....		
	Foundries and stove works.....	146	.....	40	W.....		
	Foundries and stove works.....	145	.....	40	2 M.....		
10	Flour-mills	125	2	52	W.....	318,500	670,170
	Flour-mills	18	6	45	W.....		
3	File works.....	45	.....	52	W.....	30,000	45,000
138	Furniture manufactories	277	120	48	W.....	4,880,000	6,550,000
	Furniture manufactories.....	630	40	51	W.....		
	Furniture manufactories.....	540	74	50	W.....		
	Furniture manufactories.....	242	40	47	W.....		
	Furniture manufactories.....	300	223	45	W.....		
	Furniture manufactories.....	1,204	40	52	W.....		
5	Fertilizer manufactories.....	110	.....	52	W.....	325,000	250,000
3	Glass factories.....	149	.....	41	W.....	270,000	340,000
1	Gas-light company.. ..	342	1	52	W.....	600,000	1,230,000
1	Gold pen and pencil manufactory.....	25	10	52	W.....	75,000	100,000
21	Hardware, cutlery and edge tools.....	805	.....	50	W.....	970,000	1,422,000
23	Hosiery and knitting works.....	145	517	50	W.....	210,000	600,000
14	Hat and cap manufactories.....	8	42	40	W.....	53,000	73,000
	Hat and cap manufactories.....	50	57	52	W.....		
2	Ink and blacking manufactories.....	106	6	52	.....	213,000	325,000

* Not given.

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Cincinnati—Continued.

No. of establishments.	Industrial establishments	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
37	Jewelry manufactories	750	60	50	W.....	\$850,000	\$1,320,000
1	Lime kiln	75	.....	48	W.....	50,000	80,000
5	Lead pipe works.....	48	.....	52	W.....	75,000	300,000
13	Lithographers	420	40	52	W.....	651,000	987,000
125	Lundries.....	100	900	52	W.....	175,000	500,000
20	Mineral water works.....	136	3	52	W.....	150,000	275,000
20	Mattress manufactories.....	36	3	44	W.....	75,000	275,000
	Mattress manufactories.....	100	12	52	W.....		
46	Machine shops.....	1,030	8	50	W.....	2,340,000	4,775,000
	Machine shops.....	1,175	18	52	W.....		
1	Music publisher	54	7	52	W.....	12,000	35,000
1	Neck-yoke manufactory	5	.....	52	W.....	15,000	15,000
1	Nickel-plating works.....	97	2	52	W.....	50,000	65,000
2	Oil works	233	.....	52	W.....	228,000	228,000
1	Office appliances manufactory	22	35	52	W.....	*	*
35	Planing-mills	294	39	52	W.....	1,500,000	4,200,000
	Planing-mills	213	.....	51	W.....		
	Planing-mills	330	.....	50	W.....		
	Planing-mills	296	6	48	W.....		
	Planing-mills	261	.....	42	W.....		
	Paper wrapper manufact's, envelopes, etc	223	.....	30	W.....	3,000,000	5,000,000
	Pork packers.....	1,200	880	50	W.....		
148	Pork packers.....	805	.....	50	W.....	5,240,000	10,573,000
	Pork packers.....	1,232	45	52	W.....		
3	Pump manufactories	36	.....	52	W.....	40,000	50,000
3	Potteries	18	.....	45	W.....	76,000	116,000
	Potteries	81	27	52	W.....		
3	Peanut works.....	18	45	52	W.....	75,000	160,000
	Peanut works.....	1	15	48	W.....		
1	Plow manufactory	7	.....	52	W.....	2,500	2,500
89	Plumbing and gas fitting establishments	498	.....	52	W.....	527,500	1,120,000
198	Printing offices.....	3,444	456	52	W.....	4,850,000	4,300,000
	Railroad shops.....	471	5	52	M.....	*	*
1	Rolling-mill	200	.....	52	W.....	450,000	325,000
1	Renovater	7	.....	52	W.....	25,000	150,000
28	Soap and candle manufactories	217	127	52	W.....	3,200,000	7,500,000
	Soap and candle manufactories	577	331	50	W.....		
3	Suspender manufactories	15	66	52	W.....	30,000	75,000
8	Sheet-iron works.....	118	.....	52	W.....	108,000	206,000
7	Steam heater manufactories	37	.....	30	W.....	90,000	140,000
	Steam heater	42	.....	52	W.....		
	Steam heater	21	.....	40	W.....		
3	Stencil and stamp manufactories	168	.....	50	W.....	125,000	175,000
67	Saddle and harness manufactories.....	568	22	52	W.....	668,900	1,500,000
	Saddle and harness manufactories.....	408	15	50	W.....		
56	Stone and marble works.....	476	.....	52	2 M.....	678,000	1,274,000
	Stone and marble works.....	609	.....	52	W.....		
1	Shot manufactory.....	7	.....	52	W.....	35,000	100,000
3	Saw manufactories.....	138	.....	52	W.....	170,000	260,000
12	Safe and lock works.....	1,330	125	52	W.....	1,163,000	1,810,000
8	Show case manufactories	185	10	52	W.....	200,000	275,000
9	Spice-mills.....	96	42	52	W.....	205,000	600,000
1	Spring manufactory	12	.....	52	W.....	10,000	10,000
1	Transfer Co.....	37	.....	52	W.....	50,000	60,000
1	Tea Co.....	26	.....	51	W.....	10,000	30,000
117	Tin shops.....	690	12	52	W.....	407,000	1,200,000
12	Tin, slate and iron roofing works	204	.....	52	W.....	166,000	360,000
11	Tent and awning manufactories	60	45	52	W.....	250,000	100,000
1	Truss manufactory.....	50	.....	50	W.....	50,000	60,000
20	Toy factories.....	52	4	50	W.....	125,000	225,000
	Toy factories.....	84	78	52	W.....		
13	Trunk manufactories.....	199	7	52	W.....	134,000	312,000
	Trunk manufactories.....	170	.....	50	W.....		
3	Tanneries	516	.....	52	W.....	1,175,000	1,160,000

* Not given

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Cincinnati—Concluded.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
5	Type foundries.....	128	17	51	2 M.....	} 400,000	400,000
	Type foundries.....	160	75	52	W.....		
3	Wine and bitters manufactories.....	78	12	52	W.....	125,000	450,000
5	Wheel manufactories.....	325	...	52	W.....	240,000	520,000
12	Washing machine manufactories.....	285	7	52	W.....	260,000	400,000
1	Willow-ware manufactory.....	100	.....	50	W.....	10,000	35,000
20	Wire goods manufactories.....	343	12	52	W.....	171,700	669,000
9	White lead manufactories.....	50	.....	42	W.....	} 1,330,000	1,710,000
	White lead manufactories.....	84	.....	50	W.....		
	White lead manufactories.....	100	.....	45	W.....		
1	Wheel-barrow manufactory.....	31	.....	52	W.....	15,000	45,000
4	Woolen-mills.....	94	171	52	W.....	625,000	875,000
5	Varnish manufactories.....	56	7	52	W.....	175,000	280,000
2	Yeast manufactories.....	108	5	52	W.....	35,000	60,000
	Bricklayers.....	600	.....	40	W.....	.....	.....
	Carpenters.....	2,000	.....	48	W.....	.....	.....
	Plasterers.....	400	.....	48	W.....	.....	.....
3741	Total.....	58,596	13,396	.....	.....	\$71,858,500	\$135,239,352

Average number of weeks in operation, 49 5-86.

Findlay, Hancock County.

2	Carriage works.....	35	.....	52	W.....	18,000	20,000
1	Furniture manufactory.....	8	.....	50	W.....	3,000	7,000
1	Flour-mill.....	4	.....	52	W.....	15,000	20,000
3	Glass works.....	41	.....	30	W.....	} 125,000	288,000
	Glass works.....	90	.....	40	W.....		
	Glass works.....	133	8	48	W.....		
1	Galvanized iron and tin works.....	20	.....	52	W.....	4,000	12,000
1	Handle manufactory.....	6	.....	45	W.....	1,500	8,000
1	Mask manufactory.....	7	6	52	2 M.....	5,000	8,000
1	Machine shop.....	30	.....	52	W.....	40,000	150,000
3	Printing offices.....	35	.....	52	W.....	13,000	13,000
2	Planing-mills.....	49	.....	52	W.....	65,000	175,000
1	Rake works.....	30	.....	32	W.....	40,000	40,000
	Street laborers.....	6	.....	36	W.....	.....	.....
	Bricklayers.....	100	.....	38	W.....	.....	.....
	Plasterers.....	50	.....	36	W.....	.....	.....
	Painters.....	61	.....	45	W.....	.....	.....
	Stonemasons.....	105	.....	40	W.....	.....	.....
	Carpenters.....	250	.....	45	2 M.....	.....	.....
	Hod-carriers.....	62	.....	52	W.....	.....	.....
	Tailors.....	75	4	52	W.....	.....	.....
	Dress-makers.....	.....	23	52	W.....	.....	.....
	Plumbers.....	45	.....	52	W.....	.....	.....
	Clerks in stores.....	130	29	52	W.....	.....	.....
17	Total.....	1,372	70	.....	.....	\$329,500	\$741,000

Average number weeks in operation during the year, 46 5-24. Number of organized men, 500.

Kenton, Hardin County.

1	Bottling works.....	5	.....	52	W.....	1,500	2,000
1	Brick yard.....	6	.....	30	W.....	1,500	2,000
1	Creamery.....	6	.....	52	M.....	150,000	100,000
4	Carriage manufactories.....	37	.....	52	W.....	27,000	29,000
2	Cigar factories.....	7	.....	52	W.....	1,500	4,400
1	Elevator.....	5	.....	52	W.....	3,130	5,000
2	Flour-mills.....	19	.....	52	W.....	13,000	41,000
1	Gas works.....	4	.....	52	M.....	50,000	75,000
1	Handle and spoke manufactory.....	7	.....	50	2 M.....	5,000	12,000
1	Iron fence works.....	9	.....	52	W.....	5,000	6,000
1	Mineral water manufactory.....	1	2	52	W.....	2,000	2,000

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Kenton—Concluded.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
4	Printing offices	13	4	52	W.....	\$22,500	\$22,600
2	Planing mills	70		52	W.....	110,000	110,000
2	Saw mills	45		52	W.....	16,000	30,000
1	Stave manufactory	22		45	W.....	25 000	25,000
1	Straw-board manufactory	50		52	M.....	150,000	100,000
	Bricklayers	8		38	2 M.....		
	Clerks in stores	38	1	52	W.....		
	Dressmakers		8	52	W.....		
	Hod carriers	10		40	W.....		
	Plasterers	10		40	W.....		
	Street laborers	4		45	W.....		
	Stone masons	6		40	W.....		
	Tailors	11		52	W.....		
26	Totals	393	27			\$583,130	\$566,000

Average number of weeks in operation during the year, 48 12-25. Number of organized men, 200.

Deshler, Henry County.

1	Brick and tile manufactory	5		20	W.....	5,000	5,000
1	Machine shop	3		40	W.....	3,000	4,000
2	Planing mills	34		30	W.....	16,000	35,000
1	Printing office	2		52	W.....	2 500	1,500
1	Stave factory	55		50	W.....	15,000	35,000
	Blacksmiths	3		52	W.....		
	Carpenters	6		40	W.....		
	Clerks in stores	2		52	W.....		
	Painters	3		45	W.....		
	Plasterers	4		38	W.....		
	Street laborers	75		38	W.....		
6	Totals	192				\$41,500	\$80,500

Average number of weeks in operation during the year, 41 6-11. Number of organized men, 35.

Napoleon.

1	Brick and tile manufactory	5		52	W.....	3,000	5,000
1	Boat-oar manufactory	6		52	W.....	2,500	24,000
1	Brewery	5		52	W.....	20,000	16,500
1	Carriage manufactory	4		52	W.....	2,000	3,000
2	Flour mills	13		52	W.....	45,000	57,000
1	Hoop manufactory	45		52	W.....	12,000	40,000
1	Planing mill	18		52	W.....	10,000	10,000
2	Printing offices	8		52	W.....	14,500	14,000
1	Woolen mill	6	17	36	W.....	10,000	10,000
	Blacksmiths	10		52	W.....		
	Bricklayers	5		38	W.....		
	Clerks in stores	67	3	52	W.....		
	Carpenters	4		40	W.....		
	Dressmakers		10	52	W.....		
	Hod carriers	8		38	W.....		
	Plasterers	8		36	W.....		
	Painters	6		40	W.....		
	Street laborers	8		40	W.....		
	Stone masons	5		38	W.....		
	Tailors	8		52	W.....		
11	Totals	239	30			\$119,000	\$179,500

Average number of weeks in operation during the year, 46 3-5. Number of organized men, 30.

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Logan, Hocking County.

No. of establishments.	Industrial establishments.	Number of men em- ployed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital in- vested.	Value of annual pro- duct.
2	Furniture manufactories.....	51	.....	52	W.....	\$48,000	\$65,000
1	Flour mill.....	8	.....	52	W.....	35,000	120,000
1	Fire-brick company	40	.....	52	W.....	20,000	17,000
1	Foundry	30	1	52	W.....	25,000	30,000
1	Iron and steel company	67	.....	52	W... ..	40,000	80,000
2	Tanneries	7	.....	52	W.....	4,500	3,000
1	Woolen mill.....	7	2	46	W.....	15,000	8,000
	Street laborers.....	20	.....	36	W.....	.....	.....
	Bricklayers.....	6	.....	40	W.....	.....	.....
	Plasterers	7	.....	45	W.....	.....	.....
	Painters.....	18	.....	40	W.....	.....	.....
	Stone masons	15	.....	38	W.....	.....	.....
	Carpenters	22	.....	45	W.....	.....	.....
	Blacksmiths.....	28	.....	52	W.....	.....	.....
	Tailors	27	46	52	W.....	.....	.....
	Dressmakers .....	.....	7	52	D.....	.....	.....
	Clerks in stores	192	7	52	W.....	.....	.....
9	Totals	545	63	.....	.....	\$187,500	\$323,000

Average number of weeks in operation during the year, 47. Number of organized men, 100.

Bellevue, Huron County.

1	Agricultural implement manufactory ...	50	.....	40	W.....	90,000	65,000
1	Cooper shop... ..	26	.....	52	W.....	3,000	18,000
1	Flour mill.....	56	.....	35	W.....	50,000	425,000
1	Planing mill	4	.....	52	W.....	13,000	30,000
	Street laborers	17	.....	38	W.....	.....	.....
	Bricklayers.....	7	.....	40	W.....	.....	.....
	Plasterers	4	.....	42	W.....	.....	.....
	Stone masons	3	.....	40	W.....	.....	.....
	Carpenters	12	.....	45	W.....	.....	.....
	Tailors	5	5	50	W.....	.....	.....
	Dressmakers .....	.....	8	52	W.....	.....	.....
	Clerks in stores.....	25	.....	52	W.....	.....	.....
4	Totals	209	13	.....	.....	\$156,000	\$538,000

Average number of weeks in operation during the year, 44 5-6.

Collins.

1	Bent works	28	.....	52	W.....	9,000	30,000
1	Furniture manufactory.....	2	.....	52	W.....	2,000	2,000
1	Pump works	3	.....	30	W.....	4,000	5,000
1	Tile works	6	.....	26	W.....	2,000	4,000
	Street laborers	12	.....	38	W.....	.....	.....
	Bricklayer	1	.....	38	W.....	.....	.....
	Painter.....	1	.....	40	W.....	.....	.....
	Carpenters	4	.....	45	W.....	.....	.....
	Blacksmiths.....	2	.....	52	W.....	.....	.....
	Tailors	2	.....	50	W.....	.....	.....
	Dressmakers .....	.....	2	52	W.....	.....	.....
	Clerks in stores	6	.....	52	W.....	.....	.....
4	Totals	67	2	.....	.....	\$17,000	\$41,000

Average number of weeks in operation during the year, 43½.

Monroeville.

1	Bent works	7	.....	50	W.....	5,000	10,000
	Flour mill.....	10	.....	52	W.....	25,000	50,000
	Street laborers	2	.....	38	W.....	.....	.....

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Monroeville—Concluded.

No. of establishment.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
	Bricklayers	3	.....	40	W.....	.....	.....
	Plasterers	8	.....	38	W.....	.....	.....
	Painters	8	.....	40	W.....	.....	.....
	Carpenters	10	.....	45	W.....	.....	.....
	Blacksmiths.....	4	.....	52	W.....	.....	.....
	Tailors.....	3	.....	50	W.....	.....	.....
	Dressmakers .....	.....	8	52	W.....	.....	.....
	Clerks in stores	11	.....	52	W.....	.....	.....
2	Total.....	66	8	.....	.....	\$30,000	\$60,000

Average number of weeks in operation during the year, 46 3-11.

Norwalk.

2	Breweries	14	.....	52	W.....	\$35,000	\$45,000
1	Boiler works.....	3	.....	50	W.....	2,000	3,000
3	Carriage works	20	.....	52	W.....	18,500	24,000
1	Carpet sweeper manufactory.....	6	.....	52	W.....	20,000	20,000
2	Flour mills.....	6	.....	52	W.....	13,000	35,000
	Flour mills.....	6	.....	46	W.....		
1	Kite factory.....	10	65	52	W.....	15,000	50,000
2	Machine shops.....	13	.....	52	W.....	8,000	13,000
1	Organ manufactory.....	145	.....	52	W.....	150,000	200,000
1	Postal box manufactory.....	16	.....	52	W.....	10,000	20,000
4	Printing offices	23	2	52	W.....	37,750	50,000
	Printing offices	18	6	50	W.....		
2	Planing mills	10	.....	50	W.....	25,000	45,000
	Planing mills	25	.....	52	W.....		
2	Railroad shops.....	325	.....	52	M.....	.....	.....
1	Tobacco manufactory.....	8	15	50	W.....	20,000	70,000
	Street laborers	20	.....	38	W.....	.....	.....
	Bricklayers	10	.....	38	W.....	.....	.....
	Plasterers	10	.....	40	W.....	.....	.....
	Painters.....	45	.....	45	W.....	.....	.....
	Stone-masons	10	.....	40	W.....	.....	.....
	Carpenters	42	.....	45	W.....	.....	.....
	Hod carriers.....	4	.....	38	W.....	.....	.....
	Blacksmiths.....	12	.....	52	W.....	.....	.....
	Tailors	9	10	50	W.....	.....	.....
	Dressmakers .....	.....	50	52	W.....	.....	.....
	Plumbers	5	.....	40	W.....	.....	.....
	Clerks in stores	105	40	52	W.....	.....	.....
23	Total.....	920	188	.....	.....	\$354,250	\$575,000

Average number of weeks in operation during the year, 48 1-7. Number of organized men, 350.

Wakeman.

2	Bent works	5	.....	35	W.....	\$8,000	\$11,000
	Bent works	6	.....	40	W.....		
1	Cooper shop.....	2	.....	40	W.....	300	1,200
1	Flour mill.....	2	.....	26	W.....	5,000	3,000
	Stone-masons	4	.....	38	W.....	.....	.....
	Carpenters	10	.....	45	W.....	.....	.....
	Blacksmiths	2	.....	52	W.....	.....	.....
	Tailor	1	.....	50	W.....	.....	.....
	Dressmakers .....	.....	4	52	W.....	.....	.....
	Clerks in stores	2	1	52	W.....	.....	.....
4	Total.....	34	5	.....	.....	\$13,300	\$15,200

Average number of weeks in operation during the year, 43.

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.
Coalton, Jackson County.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
1	Planing mill	24	.....	52	W.....	\$15,000	\$15,000
1	Total.....	24	.....	.....	.....	\$15,000	\$15,000

Jackson.

3	Brick manufactories	43	.....	52	2 M.....	\$6,000	\$6,000
1	Machine shop.....	5	.....	26	Daily ..	1,700	4,500
2	Printing offices.....	6	2	52	W.....	*	*
2	Planing mills	15	.....	52	W.....	20,000	27,000
1	Tannery.....	13	.....	52	W.....	20,000	20,000
	Bricklayers.....	10	.....	36	W.....	.....	.....
	Carpenters	15	.....	45	W.....	.....	.....
	Clerks in stores.....	15	.....	52	W.....	.....	.....
	Hod carriers.....	5	.....	38	2 M.....	.....	.....
	Ore diggers.....	500	.....	35	W.....	.....	.....
	Plasterers.....	12	.....	45	W.....	.....	.....
	Painters	8	.....	38	W.....	.....	.....
	Stone-masons	6	.....	45	W.....	.....	.....
9	Total	653	2	.....	.....	\$47,700	\$57,500

Average number of weeks in operation, 43 9-13. Number of organized men, 200.

*Not given.

Wellston.

2	Foundries and machine shops	70	.....	52	2 M.....	\$150,000	\$210,000
	Foundries and machine shops.....	65	.....	50	M.....		
1	Nail works.....	143	.....	52	2 M.....	125,000	175,000
1	Printing office.....	5	.....	52	W.....	5,000	10,000
1	Pad manufactory .....	.....	12	52	M.....	3,000	40,000
1	Planing mill	78	.....	52	2 M.....	35,000	50,000
	Bricklayer	1	.....	38	W.....	.....	.....
	Carpenters	18	.....	40	W.....	.....	.....
	Mill hands	8	.....	52	W.....	.....	.....
	Plasterers.....	5	.....	38	W.....	.....	.....
	Sawyers	3	.....	45	W.....	.....	.....
	Street laborers	30	.....	38	W.....	.....	.....
	Teamsters	13	.....	52	W.....	.....	.....
6	Total	439	12	.....	.....	\$318,000	\$485,000

Average number of weeks in operation during the year, 47 2-13. Number of organized men, 135.

Steubenville, Jefferson County.

1	Boiler manufactory.....	6	.....	52	2 M.....	\$800	\$5,000
2	Brick yards	40	.....	45	2 M.....	21,000	52,000
	Brick yards	16	.....	48	W.....		
1	Boot and shoe factory	10	.....	52	W.....	2,000	8,000
1	Blast furnace.....	100	.....	26	2 M.....	150,000	150,000
1	Clay works.....	25	5	48	2 M.....	20,000	30,000
1	Contractor	60	.....	32	W.....	10,000	10,000
1	Electric light works.....	5	.....	52	2 M.....	.....	.....
1	Furniture manufactory.....	35	.....	50	W.....	10,000	50,000
2	Foundries	105	.....	51	W.....	70,000	100,000
2	Flour mills	14	.....	52	W.....	65,000	110,000
4	Glass works	485	80	45	2 M.....	103,000	245,000
	Glass works	15	3	44	W.....		
1	Gas company	14	.....	52	2 M.....	.....	.....
1	Harness and saddle manufactory.....	2	.....	52	W.....	300	1,000
1	Machine shop.....	6	.....	52	W.....	500	3,000
3	Marble works.....	14	1	52	W.....	8,500	21,500

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Steubenville—Concluded.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value annual product.
6	Merchant tailors.....	{ 28 10 14	36 15 20	52 45 50	W..... W..... W.....	{ \$48,000	{ \$165,000
5	Printing offices	52	6	52	W.....	48,000	51,000
1	Pottery.....	100	57	50	2 M.....	100,000	150,000
2	Planing mills	{ 13 25 640	..... ..... .....	45 50 46	W..... W..... 2 M.....	{ 25,000	{ 100,000
3	Rolling-mills	{ 250 400	..... .....	46 45	W..... 2 M.....	{ 1,525,000	{ 1,845,000
1	Stair-turning works.....	4	.....	50	W.....	1,000	2,000
1	Saw mill	8	.....	36	W.....	2,500	2,500
1	Soap factory.....	3	.....	52	2 M.....	2,500	2,500
1	Undertaker	4	.....	52	W.....	.....	.....
1	Wagon and carriage manufactory	6	.....	52	2 M.....	2,500	3,500
41	Totals	2,509	223	.....	.....	\$2,215,600	\$3,007,000

Average number of weeks in operation, 47¾. Number of organized men, 650.

Centerburg, Knox County.

1	Flour mill.....	1	.....	8	W.....	5,000	1,500
1	Machine shop.....	12	.....	52	W.....	20,000	15,000
1	Printing office.....	2	.....	52	W.....	1,600	1,600
2	Planing mills	{ 10 4	..... .....	52 26	W..... W.....	{ 25,500	{ 27,200
2	Tile manufactories.....	{ 3 6	..... .....	52 12	W..... W.....	{ 17,000	{ 12,000
7	Totals	38	.....	.....	.....	\$69,100	\$70,800

Average number of weeks in operation during the year, 36 2-7.

Fredericktown.

1	Bell works.....	10	.....	35	2 M.....	24,000	20,000
1	Brick yard	6	.....	20	2 M.....	1,500	3,000
1	Creamery	8	.....	28	M.....	3,000	4,000
1	Carriage manufactory.....	6	.....	52	M.....	7,000	10,000
1	Flour mill	4	.....	50	W.....	20,000	30,000
1	Sealing-wax manufactory.....	4	.....	8	M.....	700	600
	Bricklayers.....	3	.....	36	W.....	.....	.....
	Blacksmiths.....	5	.....	52	W.....	.....	.....
	Carpenters	10	.....	45	2 M.....	.....	.....
	Clerks in stores	10	.....	52	W.....	.....	.....
	Dressmakers .....	.....	5	52	W.....	.....	.....
	Plasterers	2	.....	38	W.....	.....	.....
	Painters	6	.....	40	W.....	.....	.....
	Tailors	2	.....	52	W.....	.....	.....
6	Totals	76	5	.....	.....	\$56,200	\$67,600

Average number of weeks in operation during the year, 40.

Mt. Vernon.

1	Bridge company	60	1	52	2 M.....	75,000	200,000
1	Bakery	4	.....	52	W.....	4,000	4,000
1	Brick yard	18	.....	30	W.....	1,500	3,000
1	Cigar factory.....	4	.....	46	W.....	2,450	9,000
2	Carriage works.....	17	.....	52	W.....	14,000	12,000
2	Flour mills.....	29	1	52	W.....	120,000	265,000
	Furniture manufactory.....	15	.....	52	2 M.....	40,000	40,000

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Mt. Vernon—Concluded.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
1	Gas company	3	.....	52	2 M.....	\$100,000	\$100,000
1	Linseed oil works.....	8	.....	40	2 M.....	60,000	100,000
1	Marble works	5	.....	52	2 M.....	3,500	6,000
5	Printing offices	{ 4	.....	6	W	} 22,700	22,700
		12	2	52	W		
1	Plow works	4	.....	45	W	4,000	2,000
1	Railroad shop.....	82	.....	52	M.....	.....	.....
2	Steam engine manufactories.....	275	1	52	2 M.....	555,000	555,000
1	Saw mill.....	10	.....	26	W	7,000	10,000
	Barbers	10	.....	26	W .....	.....	.....
	Bricklayers.....	6	.....	36	W .....	.....	.....
	Blacksmiths.....	25	.....	52	W .....	.....	.....
	Clerks in stores.....	149	48	52	W .....	.....	.....
	Carpenters	25	.....	45	2 M.....	.....	.....
	Coopers	3	.....	52	W .....	.....	.....
	Dressmakers .....	.....	34	52	W .....	.....	.....
	Harness makers.....	6	.....	52	W .....	.....	.....
	Hod carriers.....	4	.....	38	W .....	.....	.....
	Flumbers	3	.....	52	W .....	.....	.....
	Painters.....	8	.....	40	W .....	.....	.....
	Plasterers	6	.....	38	W .....	.....	.....
	Street laborers	30	.....	36	W .....	.....	.....
	Shoemakers.....	15	.....	36	W .....	.....	.....
	Tailors	14	.....	52	W .....	.....	.....
22	Totals	854	87	.....	.....	\$1,009,150	\$1,326,700

Average number of weeks in operation during the year, 44 8-31. Number of organized men, 250.

Painesville, Lake County.

1	Butcher-knife manufactory.....	40	12	52	M.....	20,000	40,000
2	Flour mills.....	17	.....	50	W	65,000	115,000
1	Iron foundry	7	.....	50	W	4,000	6,000
2	Machine shops	69	.....	50	W	95,000	115,000
1	Planing mill	7	.....	45	W	3,000	4,500
1	Stove foundry	28	.....	50	2 M.....	30,000	35,000
1	Window-shade roller manufactory.....	20	.....	52	W	15,000	25,000
	Blacksmiths.....	6	.....	52	W .....	.....	.....
	Laborers	21	.....	38	2 M.....	.....	.....
	Carpenters	14	.....	45	W .....	.....	.....
	Bricklayers.....	8	.....	45	W .....	.....	.....
	Plasterers	7	.....	38	W .....	.....	.....
	Painters.....	18	.....	43	W .....	.....	.....
	Stone masons	4	.....	36	W .....	.....	.....
	Hod carriers	6	.....	45	W .....	.....	.....
	Tailors	4	.....	52	W .....	.....	.....
	Dressmakers .....	.....	24	52	Daily..	.....	.....
	Clerks in stores.....	22	8	52	W .....	.....	.....
9	Tota's	298	44	.....	.....	\$232,000	\$340,500

Average number of weeks in operation during the year, 47.

Ironton, Lawrence County.

5	Blast furnaces	{ 190	.....	52	2 M.....	} 845,000	634,400
		46	.....	* 34	2 M.....		
		54	.....	* 50	2 M.....		
3	Brick yards	{ 30	.....	42	W	} 41,900	80,000
		30	.....	48	W		
		40	.....	52	W		
1	Brewery.....	20	.....	52	2 M.....	10,000	5,000
1	Buggy works.....	11	.....	52	W	6,000	10,000

* Coke and ore shovelers employed about ten weeks.

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Ironton—Concluded.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
4	Printing offices.....	13	4	52	W.....	\$19,000	\$11,000
	Printing offices.....	6		52	2 M.....		
2	Rolling-mills.....	403		†36	2 M.....	850,000	554,374
	Rolling-mills.....	490		46	2 M.....		
3	Stove works.....	*35	1	50	W.....	11,000	213,451
	Stove works.....	46		31	W.....		
	Stove works.....	42		42	W.....		
1	Tannery.....	40		52	W.....	8,000	10,000
20	Total.....	1,496	5			\$1,790,900	\$1,518,225

Average number weeks in operation during the year, 46 7-16. Number of organized men, 269.

Newark, Licking County.

1	Brewery.....	5		52	W.....	6,000	7,200
3	Cigar factories.....	64	31	52	W.....	24,300	48,000
3	Carriage manufactories.....	33		52	W.....	17,000	33,000
1	Electric light works.....	3		52	M.....	25,000	7,000
4	Flour-mills.....	20		52	W.....	73,000	230,000
2	Foundries.....	7		52	W.....	25,000	47,000
	Foundries.....	47		50	2 M.....		
3	Machine shops.....	80		52	2 M.....	105,000	145,000
	Machine shops.....	67		52	W.....		
2	Planing-mills.....	28		52	W.....	24,000	70,000
	Planing mills.....	20		52	2 M.....		
2	Printing offices.....	28	2	52	W.....	31,000	35,000
1	Paper manufactory.....	21	6	52	2 M.....	30,000	40,000
1	Railroad shop.....	688	4	52	M.....		
1	Stove works.....	46		50	2 M.....	50,000	75,000
	Barbers.....	48		52	W.....		
	Bricklayers.....	13		38	2 M.....		
	Clerks in stores.....	174	39	52	W.....		
	Dress-makers.....		20	52	W.....		
	Hod-carriers.....	13		38	W.....		
	Plasterers.....	7		40	W.....		
	Plumbers.....	8		52	W.....		
	Stonemasons.....	18		44	W.....		
	Tailors.....	12		52	W.....		
24	Total.....	1,450	102			\$410,300	\$737,200

Average number of weeks in operation during the year, 49 5-6. Number of organized men, 230.

Bellefontaine, Logan County.

5	Carriage manufactories.....	75		52	W.....	26,800	72,000
1	Carriage and body manufactory.....	16		52	W.....	4,000	18,000
1	Chair stock manufactory.....	35		52	W.....	30,000	100,000
1	Chair manufactory.....	35		32	W.....	10,000	30,000
1	Elevator.....	4		52	W.....	12,000	37,000
1	Flour-mill.....	15	1	52	W.....	75,000	400,000
1	Furniture manufactory.....	4	1	26	W.....	2,000	3,500
3	Machine shops.....	11		52	W.....	6,400	7,500
1	Planing-mill.....	14		52	W.....	8,000	40,000
3	Printing offices.....	22		52	W.....	4,000	15,500
	Bricklayers.....	6		38	2 M.....		
	Clerks in stores.....	35	15	52	W.....		
	Carpenters.....	7		45	2 M.....		
	Dress-makers.....		9	52	W.....		
	Hod-carriers.....	8		44	2 M.....		
	Plasterers.....	8		44	2 M.....		

* Number of employes are stockholders.

† Idle from June 17 to September 27, owing to a strike about pay; satisfactorily adjusted.

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Bellefontaine—Concluded.

No of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
	Stonemasons.....	6	.....	38	2 M.....	.....	.....
	Street laborers.....	3	.....	50	M.....	.....	.....
	Tailors.....	8	.....	52	2 M.....	.....	.....
18	Total.....	312	26	.....	.....	\$178,200	\$723,500

Average number of weeks in operation, 46 15-19.

Toledo, Lucas County.

2	Awning works.....	24	25	35	W.....	20,000	40,000
1	Bridge works.....	127	.....	52	W.....	120,000	450,000
	Bottling works.....	25	.....	52	W.....	11,000	27,000
	Boiler works.....	14	.....	52	W.....	6,000	12,000
1	Bicycle manufactory.....	196	38	52	W.....	125,000	280,000
1	Brush manufactory.....	104	20	52	W.....	35,000	50,000
2	Brass foundries.....	9	.....	50	W.....	5,500	9,000
1	Book bindery.....	5	10	52	W.....	3,000	6,000
4	Box factories.....	14	39	52	W.....	53,500	91,500
	Box factories.....	15	.....	40	W.....		
	Box factories.....	12	.....	50	M.....		
	Box factories.....	34	.....	50	W.....		
7	Breweries.....	83	.....	52	W.....	1,686,000	1,656,000
	Breweries.....	205	.....	52	2 M.....		
2	Bent works.....	132	.....	50	W.....	135,000	120,000
2	Cooper shops.....	8	.....	42	W.....	40,000	42,000
	Cooper shops.....	39	.....	52	W.....		
4	Clothing manufactories.....	24	325	50	W.....	218,000	400,000
	Clothing manufactories.....	16	78	11	W.....		
	Clothing manufactories.....	21	25	52	W.....		
6	Carriage and wagon manufactories.....	174	39	50	W.....	624,000	1,039,000
	Carriage and wagon manufactories.....	583	.....	50	2 M.....		
20	Cigar factories.....	77	39	52	W.....	152,000	222,000
	Cigar factories.....	215	85	50	W.....		
2	Cornice works.....	52	.....	50	W.....	15,000	31,000
2	Cracker factories.....	61	.....	52	W.....	22,000	90,000
3	Coffee and spice-mills.....	62	65	52	W.....	70,000	145,000
1	Chair manufactory.....	46	.....	50	W.....	30,000	35,000
1	Car works.....	62	.....	52	M.....	40,000	96,000
2	Electric light works.....	28	.....	52	M.....	150,000	25,060
9	Foundries and machine shops.....	268	.....	52	W.....	293,500	410,000
	Foundries and machine shops.....	146	.....	52	2 M.....		
	Foundries and machine shops.....	132	.....	52	M.....		
3	Furniture manufactories.....	36	.....	51	2 M.....	162,000	200,000
	Furniture manufactories.....	181	.....	50	W.....		
3	Flour-mills.....	189	.....	50	W.....	224,000	829,000
1	Iron fencing works.....	3	.....	52	W.....	1,000	2,000
3	Knitting-mills.....	41	339	52	W.....	100,000	260,000
6	Laundries.....	35	85	52	W.....	18,500	47,000
3	Marble works.....	29	.....	50	M.....	70,000	92,000
	Marble works.....	11	.....	52	W.....		
	Marble works.....	23	.....	30	2 M.....		
1	Nut and bolt works.....	142	49	52	2 M.....	125,000	250,000
1	Oil works.....	39	.....	40	2 M.....	60,000	100,000
1	Packing house.....	26	.....	50	W.....	50,000	55,000
16	Printing offices.....	346	55	52	W.....	8,075,600	11,749,300
1	Paper-mill.....	24	6	52	W.....	300,000	275,000
1	Plow manufactory.....	24	.....	40	W.....	30,000	50,000
1	Pail manufactory.....	29	.....	36	W.....	20,000	20,000
1	Pin works.....	27	48	52	2 M.....	64,000	50,000
1	Pump works.....	18	.....	52	W.....	75,000	100,000
9	Planing-mills.....	236	.....	52	M.....	936,000	1,522,000
	Planing-mills.....	356	.....	40	M.....		
	Planing-mills.....	108	.....	52	W.....		
2	Paint shops.....	24	.....	50	2 M.....	40,000	80,000
2	Sewing machine manufactories.....	228	.....	50	2 M.....	550,000	525,000
	Sewing machine manufactories.....	119	.....	52	W.....		

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Toledo—Concluded.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
2	Soap works.....	29	.....	52	W.....	\$20,000	\$85,000
1	Signal manufactory.....	42	.....	50	2 M.....	50,000	100,000
4	Saw works	28	.....	52	W.....	} 28,000	39,000
	Saw works	25	.....	50	W.....		
1	Toy manufactory	36	9	42	W.....	30,000	75,000
1	Tool works.....	139	.....	52	W.....	263,000	400,000
4	Tin shops	105	55	52	W.....	101,000	210,000
1	Tackle block manufactory.....	25	.....	45	W.....	5,000	10,000
2	Trunk manufactories	56	.....	52	W.....	30,000	115,000
2	Tobacco manufactories	35	58	50	W.....	130,000	350,000
1	Water filter manufactory.....	26	.....	35	W.....	10,000	12,000
1	Wire manufactory	24	.....	50	W.....	10,000	20,000
1	Wheel-barrow manufactory.....	44	.....	50	M.....	75,000	120,000
	Blacksmiths.....	76	.....	50	2 M.....	.....	.....
	Carpenters	142	.....	45	2 M.....	.....	.....
	Plumbers	100	.....	52	2 M.....	.....	.....
	Painters.....	114	.....	40	2 M.....	.....	.....
	Street laborers.....	402	.....	40	2 M.....	.....	.....
	Tailors	210	.....	50	2 M.....	.....	.....
154	Total	6,963	1,492	.....	.....	\$15,517,600	\$23,018,800

Average number of weeks in operation, 48½. Number of organized men, 3,000.

London, Madison County.

1	Flour-mill	5	.....	50	W.....	18,000	*
1	Mince meat manufactory	6	.....	20	W.....	15,000	*
2	Planing-mills	7	.....	52	W.....	10,000	10,000
	Planing-mills	6	.....	40	W.....	6,000	8,000
	Carpenters	20	.....	45	2 M.....	.....	.....
	Clerks in stores.....	71	.....	52	W.....	.....	.....
	Dressmakers .....	.....	14	52	W.....	.....	.....
	Hod-carriers.....	4	.....	38	W.....	.....	.....
	Plasterers	5	.....	40	2 M.....	.....	.....
	Tailors	10	.....	52	W.....	.....	.....
4	Total	134	14	.....	.....	\$49,000	\$18,000

Average number of weeks in operation, 44 1-10.

Mt. Sterling.

1	Brick and tile works.....	5	.....	52	M.....	5,000	10,000
1	Elevator.....	5	.....	52	W.....	70,000	120,000
1	Lumber yard.....	2	.....	52	W.....	2,500	12,000
1	Planing-mill	2	.....	52	W.....	1,000	6,000
1	Printing office.....	3	.....	52	W.....	1,800	2,500
	Bricklayers.....	2	.....	38	2 M.....	.....	.....
	Blacksmiths.....	5	.....	52	W.....	.....	.....
	Clerks in stores.....	11	.....	52	W.....	.....	.....
	Carpenters	9	.....	44	W.....	.....	.....
	Dressmakers .....	.....	8	52	W.....	.....	.....
	Hod-carriers	3	.....	38	2 M.....	.....	.....
	Plasterers	2	.....	38	2 M.....	.....	.....
	Painters.....	2	.....	40	W.....	.....	.....
	Street laborers	25	.....	44	M.....	.....	.....
	Tailors	5	.....	52	W.....	.....	.....
5	Total	81	8	.....	.....	\$80,300	\$150,500

Average number of weeks in operation, 47½.

*Not given.

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Petersburg, Mahoning County.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
1	Bent wood works.....	7	.....	52	W.....	\$8,000	\$9,500
1	Barber shop.....	2	.....	52	W.....	.....	.....
5	Blacksmith shop.....	8	.....	52	W.....	.....	.....
2	Carriage factories.....	9	.....	52	W.....	3,500	5,000
2	Dressmaking establishments.....	.....	5	52	W.....	.....	.....
2	Flour-mills.....	5	.....	52	W.....	26,000	30,000
1	Foundry.....	8	.....	52	W.....	1,500	2,000
3	Furniture manufactories.....	3	.....	52	W.....	.....	.....
2	Harness shops.....	2	.....	52	W.....	300	1,050
3	Millinery establishments.....	.....	5	52	W.....	.....	.....
1	Printing office.....	2	.....	50	W.....	800	1,000
2	Shoe shops.....	6	.....	52	W.....	600	1,100
1	Stave-mill.....	20	.....	30	M.....	2,000	6,000
1	Tin shop.....	4	.....	52	W.....	500	1,000
1	Tannery.....	3	.....	52	W.....	9,000	3,000
2	Tailor shops.....	3	4	52	W.....	4,200	4,500
	Carpenters.....	12	.....	40	2 M.....	.....	.....
	Clerks in stores.....	7	1	52	W.....	.....	.....
	Plasterer.....	1	.....	38	2 M.....	.....	.....
	Street laborers.....	28	.....	50	2 M.....	.....	.....
	Stonemason.....	1	.....	38	2 M.....	.....	.....
30	Total.....	126	15	.....	.....	\$56,400	\$64,150

Average number of weeks in operation, 48 6-7.

Struthers.

1	Rolling-mill.....	56	.....	52	2 M.....	40,000	50,000
1	Total.....	56	.....	.....	.....	40,000	50,000

Youngstown.

11	Blast furnaces and rolling-mills.....	281	.....	52	2 M.....	4,085,000	6,950,000
	Blast furnaces and rolling-mills.....	523	.....	45	2 M.....		
	Blast furnaces and rolling-mills.....	2,097	.....	50	2 M.....		
	Blast furnaces and rolling-mills.....	393	.....	48	2 M.....		
	Blast furnaces and rolling-mills.....	988	.....	40	2 M.....		
2	Boiler shops.....	59	.....	52	2 M.....	28,000	59,000
2	Breweries.....	24	.....	52	W.....	170,000	95,000
2	Brick yards.....	19	.....	40	W.....	6,000	14,000
	Brick yards.....	16	.....	52	W.....		
2	Car works.....	6	.....	50	2 M.....	138,000	530,000
	Car works.....	125	.....	35	2 M.....		
1	Carriage works.....	65	.....	45	2 M.....	60,000	100,000
3	Cigar factories.....	28	1	52	W.....	3,500	10,000
1	Cooper shop.....	15	1	30	2 M.....	10,000	20,000
2	Flour-mills.....	27	.....	52	W.....	200 000	250,000
2	Foundries.....	129	.....	52	2 M.....	390,000	320,000
3	Lumber companies.....	20	.....	45	2 M.....	123,000	220,000
	Lumber companies.....	48	.....	52	W.....		
	Lumber companies.....	8	.....	52	2 M.....		
1	Mower and reaper works.....	131	.....	40	2 M.....	200,000	200,760
1	Nut and bolt works.....	83	4	45	2 M.....	60,000	100,000
3	Printing offices.....	56	1	52	W.....	53,000	63,000
1	Scale works.....	15	.....	51	M.....	25,000	15,000
1	Stone Co.....	21	.....	37	2 M.....	3,000	12,000
	Street laborers.....	12	.....	48	M.....	.....	.....
	Bricklayers.....	63	.....	38	2 M.....	.....	.....
	Plasterers.....	40	.....	38	2 M.....	.....	.....
	Painters.....	40	.....	45	2 M.....	.....	.....
	Stonemasons.....	60	.....	38	2 M.....	.....	.....
	Carpenters.....	160	.....	38	2 M.....	.....	.....
	Hod-carriers.....	20	.....	38	2 M.....	.....	.....

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Youngstown—Concluded.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
	Blacksmiths.....	31	.....	52	2 M.....	.....	.....
	Tailors.....	80	45	48	W.....	.....	.....
	Dressmakers.....	.....	39	52	W.....	.....	.....
	Plumbers.....	23	.....	52	W.....	.....	.....
	Clerks in stores.....	143	125	52	W.....	.....	.....
38	Total.....	5,849	216	.....	.....	\$5,554,500	\$8,968,760
Average number of weeks in operation, 46. Number of organized men, 3,600.							

Marion, Marion County.

1	Carriage manufactory.....	13	.....	52	M.....	1,500	3,000
1	Elevator.....	13	.....	52	W.....	40,000	100,000
1	Furniture factory.....	8	.....	52	W.....	8,000	10,000
1	Flour mill.....	9	.....	52	W.....	12,000	25,000
1	Horse shoeing and repairing.....	12	.....	52	W.....	1,000	7,000
3	Merchant tailors.....	13	20	52	W.....	20,000	45,000
2	Planing mills.....	19	.....	45	W.....	} 27,000	51,000
	Planing mill.....	28	.....	52	W.....		
3	Printing offices.....	27	.....	52	W.....	20,500	25,500
2	Stave factories.....	14	.....	26	W.....	} 17,000	22,000
	Stave factory.....	22	.....	40	W.....		
1	Shovel factory.....	72	.....	52	M.....	50,000	130,000
1	Steam laundry.....	9	3	52	W.....	2,200	3,000
1	Sulky works.....	27	.....	52	W.....	30,000	40,000
2	Slate roofers.....	18	.....	52	W.....	10,000	34,000
1	Saddlery.....	8	.....	52	W.....	2,000	4,000
2	Threshing machine manufactories.....	31	.....	52	W.....	30,000	50,000
	Threshing machine manufactory.....	188	2	50	M.....	150,000	300,000
1	Upholstering.....	4	.....	52	W.....	2,000	5,000
	Street laborers.....	5	.....	45	M.....	.....	.....
	Bricklayers.....	10	.....	38	2 M.....	.....	.....
	Plasterers.....	9	.....	40	2 M.....	.....	.....
	Stone-masous.....	20	.....	40	2 M.....	.....	.....
	Hod carriers.....	20	.....	40	2 M.....	.....	.....
	Dressmakers.....	.....	25	52	D.....	.....	.....
	Clerks in stores.....	90	10	52	W.....	.....	.....
24	Total.....	689	57	.....	.....	\$443,200	\$854,500
Average number of weeks in operation during the year, 48. Number of organized men, 125.							

Prospect.

1	Carriage manufactory.....	12	.....	48	W.....	5,000	5,000
1	Planing mill.....	5	.....	45	W.....	5,000	4,500
	Blacksmiths.....	2	.....	52	W.....	.....	.....
	Carpenters.....	4	.....	40	W.....	.....	.....
	Clerks in stores.....	12	.....	52	W.....	.....	.....
	Dressmakers.....	.....	4	52	W.....	.....	.....
	Painters.....	4	.....	40	W.....	.....	.....
	Tailors.....	2	.....	52	W.....	.....	.....
2	Totals.....	41	4	.....	.....	\$10,000	\$9,500
Average number of weeks in operation, 47 5-8.							

Middleport, Meigs County.

1	Brick manufactory.....	22	.....	50	W.....	3,500	8,000
1	Furniture manufactory.....	15	.....	52	W.....	10,000	20,000
1	Flour mill.....	8	.....	52	W.....	10,000	25,000
1	Printing office.....	16	.....	52	W.....	4,000	5,000
1	Planing mill.....	19	.....	40	W.....	10,000	25,000

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.
Middleport—Concluded.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
1	Rolling mill.....	*	.....	.....	.....	*\$125,000	*\$125,000
	Bricklayers.....	4	.....	38	W.....	.....	.....
	Blacksmiths.....	8	.....	52	W.....	.....	.....
	Clerks in stores	22	10	52	W.....	.....	.....
	Carpenters	7	.....	40	W.....	.....	.....
	Dressmakers .....	.....	9	50	W.....	.....	.....
	Hodcarriers	6	.....	38	W.....	.....	.....
	Plasterers	6	.....	38	W.....	.....	.....
	Painters	9	.....	40	W.....	.....	.....
	Stonemasons	6	.....	38	W.....	.....	.....
	Street laborers	17	.....	40	W.....	.....	.....
	Tailors	5	.....	52	W.....	.....	.....
6	Totals	170	19	.....	.....	\$162,500	\$208,000
Average number of weeks in operation during the year. 45¼.							

* Estimated. Not in operation.

Pomeroy.

1	Brewery	10	.....	52	2 M.....	†	†
2	Flour mills.....	11	.....	52	W.....	21,500	85,000
1	Furniture manufactory.....	30	.....	52	W.....	20,000	30,000
6	Lathe works.....	59	.....	40	M.....	} 183,000	290,000
	Lathe works	314	1	52	M.....		
1	Machine works.....	11	.....	52	M.....	50,000	15,000
1	Mineral water manufactory.....	4	.....	52	W.....	5,000	10,000
2	Printing offices.....	26	.....	52	W.....	11,000	12,000
2	Planing mills	18	.....	45	W.....	27,000	52,000
1	†Rolling mill.....	†	.....	.....	.....	125,000	.....
	Bricklayers.....	10	.....	38	W.....	.....	.....
	Blacksmiths.....	12	.....	52	W.....	.....	.....
	Carpenters.....	8	.....	40	W.....	.....	.....
	Clerks in stores	97	40	52	W.....	.....	.....
	Dressmakers .....	.....	20	52	W.....	.....	.....
	Hod carriers.....	6	.....	38	W.....	.....	.....
	Plasterers	15	.....	38	W.....	.....	.....
	Painters	17	.....	45	W.....	.....	.....
	Stonemasons	11	.....	40	W.....	.....	.....
	Tailors	16	6	52	W.....	.....	.....
17	Totals.....	675	67	.....	.....	\$145,500	\$494,000
Average number of weeks in operation during the year, 47 3-19. Number of organized men, 200.							

†Not given. ‡Not in operation.

+Pomeroy and Middleport are the best organized of any of the river towns, except perhaps Iron-ton. There has been much depression in business, owing to the nature of the iron and salt trades. At least \$2,000,000 are invested in the salt works in the vicinity of Pomeroy. Owing to the low tariff duty and the strong competition from both the east and west, this industry is greatly depressed. There is a large rolling mill at Pomeroy and one at Middleport, but both of these mills have been idle for some months and the employes have moved away. There are a large number of coal miners in the county, most of them non-union, working by the day instead of by the ton. This industry was greatly depressed, owing to the low water in the river from July to December, which destroyed the dependent means of transportation.

Celina, Mercer County.

3	Carriage manufactories.....	26	.....	52	W.....	16,000	14,000
1	Elevator.....	2	.....	52	M.....	3,500	30,000
2	Flour mills	7	.....	52	W.....	19,000	22,000
1	Heading factory.....	53	.....	16	W.....	10,000	25,000
2	Printing offices	5	1	52	W.....	5,025	5,500
1	Saw-mill	6	.....	40	W.....	18,000	30,000
1	Woolen mill	3	50	40	W.....	8,000	6,000

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Celina—Concluded.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
	Blacksmiths.....	3	.....	52	W.....	.....	.....
	Bricklayers.....	3	.....	40	W.....	.....	.....
	Clerks in stores.....	77	15	52	W.....	.....	.....
	Carpenters.....	20	.....	45	W.....	.....	.....
	Dress-makers.....	.....	6	52	W.....	.....	.....
	Hod-carriers.....	3	.....	40	W.....	.....	.....
	Plumber.....	1	.....	38	W.....	.....	.....
	Plasterers.....	3	.....	40	W.....	.....	.....
	Painters.....	6	.....	50	W.....	.....	.....
	Street laborers.....	50	.....	36	W.....	.....	.....
	Stonemasons.....	7	.....	40	W.....	.....	.....
	Tailors.....	3	.....	50	W.....	.....	.....
11	Total.....	278	72	.....	.....	\$79,525	\$132,500

Average number of weeks in operation during the year, 44 3-19.

Bradford Junction, Miami County.

1	Railroad shop.....	78	.....	52	W.....	.....	.....
	Clerks in stores.....	4	.....	52	W.....	.....	.....
	Dress-makers.....	.....	3	52	W.....	.....	.....
	Laborers.....	20	.....	52	W.....	.....	.....
1	Total.....	102	3	.....	.....	.....	.....

Average number of weeks in operation during the year, 52.

Covington.

1	Agricultural implements manufactory ...	4	.....	52	W.....	\$2,700	\$12,600
2	Carriage manufactories.....	20	.....	46	W.....	22,700	29,500
		6	.....	44	W.....		
1	Coal and lumber dealer.....	2	.....	52	W.....	16,000	20,000
1	Dairy.....	2	.....	52	W.....	1,000	1,500
1	Feather renovating works.....	60	.....	52	W.....	15,000	60,000
1	Flour-mill.....	6	.....	52	W.....	9,000	58,160
1	Grain warehouse.....	2	.....	52	M.....	7,500	74,500
1	Harness shop.....	3	.....	52	W.....	1,100	2,600
1	Machine shop.....	2	.....	52	W.....	6,500	3,000
2	Saw mills.....	3	.....	52	W.....	9 000	18,000
7	Stone quarries.....	86	.....	36	W.....	49,000	49,650
1	Tile and brick works.....	22	.....	52	W.....	15,000	10,000
1	Tin and metal works.....	6	.....	44	W.....	2,700	4,500
1	Tobacco works.....	5	3	36	W.....	50,000	60,000
1	Woolen mill.....	3	6	26	W.....	4,000	8,000
	Barbers.....	5	.....	52	W.....	.....	.....
	Bakers.....	2	.....	52	W.....	.....	.....
	Butchers.....	4	.....	52	W.....	.....	.....
	Bricklayers.....	2	.....	40	W.....	.....	.....
	Clerks in stores.....	13	7	52	W.....	.....	.....
	Carpenters.....	6	.....	40	W.....	.....	.....
	Carpet weavers.....	2	.....	52	W.....	.....	.....
	Dressmakers.....	.....	30	52	W.....	.....	.....
	Draymen.....	3	.....	52	W.....	.....	.....
	Pump makers.....	2	.....	52	W.....	.....	.....
	Photographers.....	2	.....	52	W.....	.....	.....
	Plasterers.....	8	.....	45	W.....	.....	.....
	Shoemakers.....	8	.....	52	W.....	.....	.....
	Street laborers.....	47	.....	36	W.....	.....	.....
	Stonemasons.....	10	.....	40	W.....	.....	.....
	Tailors.....	5	.....	48	W.....	.....	.....
	Watch and clock repairers..	2	.....	52	W.....	.....	.....
23	Total.....	353	46	.....	.....	\$211,200	\$412,010

Average number of weeks in operation during the year, 47.2/3 Number of organized men, 25.

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Piqua.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
1	Brewery.....	9	.....	52	W.....	\$6,000	\$20,000
1	Bent works.....	81	.....	52	W.....	100,000	250,000
1	Flax mill.....	11	.....	52	W.....	12,000	15,000
1	Furniture manufactory.....	8	.....	40	W.....	4,500	5,000
1	Flour-mill.....	5	.....	52	W.....	40,000	75,000
1	Hosiery manufactory.....	4	60	52	W.....	150,000	160,000
2	Handle manufactories.....	185	.....	52	W.....	180,000	90,000
2	Machine shops.....	156	.....	52	W.....	101,000	203,000
1	Mattress manufactory.....	20	.....	40	W.....	40,000	60,000
3	Oil works.....	{ 53	.....	52	W.....	} 90,000	150,000
		{ 8	.....	50	W.....		
2	Planing-mills.....	30	.....	52	W.....	42,000	80,000
2	Printing offices.....	11	2	52	W.....	2,000	3,000
1	Straw-board manufactory.....	125	.....	52	2 M.....	16,000	200,000
2	Woolen mills.....	{ 28	36	52	W.....	} 185,000	265,000
		{ 22	13	52	2 M.....		
21	Total.....	756	111	.....	.....	\$968,500	\$1,626,000

Average number of weeks in operation during the year, 50¾. Number of organized men, 230.

Dayton, Montgomery County.

2	Agricultural implements manufactory...	{ 136	.....	46	2 M.....	} \$225,000	\$265,100
		{ 48	.....	40	W.....		
1	Boiler and engine manufactory.....	186	.....	52	2 M.....	100,000	250,000
		15	.....	52	W.....	} 250,000	285,000
		27	.....	38	W.....		
5	Breweries.....	{ 12	.....	52	W.....		
		{ 23	.....	52	2 M.....		
		{ 8	.....	52	M.....	} 1,100	4,000
1	Box factory.....	{ 1	7	52	W.....		
2	Bolt and screw manufactories.....	23	60	44	W.....	} 210,000	260,000
		6	1	52	W.....		
2	Bridge works.....	257	1	52	2 M.....	} 200,000	375,732
		55	.....	45	2 M.....		
1	Book-cover manufactory.....	2	4	52	W.....	2,800	4,800
1	Car manufactory.....	1495	9	52	2 M.....	1,500,000	3,000,000
		57	165	52	W.....	} 55,050	456,200
17	Cigar manufactories.....	{ 59	150	50	W.....		
		{ 7	.....	40	W.....		
2	Cracker bakeries.....	41	2	52	W.....	45,000	100,000
1	Cordage manufactory.....	10	25	3	W.....	6,500	*
1	Cooperage.....	8	.....	52	W.....	500	4,500
2	Cigar-box manufactories.....	{ 12	8	52	W.....	} 5,000	21,000
		{ 9	12	48	W.....		
		22	.....	40	2 M.....	} 70,000	165,000
3	Carriage manufactories.....	{ 40	.....	40	W.....		
		{ 33	.....	51	W.....		
		105	1	52	W.....	} 175,000	225,000
2	Chair manufactories.....	{ 22	.....	50	W.....		
		15	.....	52	W.....	} 60,000	110,000
2	Cornice works.....	{ 32	.....	50	W.....		
1	Cash-register manufactory.....	48	.....	48	W.....	100,000	106,950
6	Flour-mills.....	79	.....	50	W.....	75,000	225,000
1	Hosiery manufactory.....	20	.....	26	W.....	75,000	375,900
1	Lamp-repairing works.....	40	.....	52	W.....	125,000	250,000
1	Lard and oil works.....	10	.....	52	2 M.....	75,000	100,000
1	Leather-collar manufactory.....	35	.....	52	W.....	45,000	23,000
1	Malleable-iron manufactory.....	200	1	50	W.....	100,000	200,000
1	Mineral and soda-water manufactory.....	11	.....	52	2 M.....	6,000	6,000
3	Machine shops.....	109	.....	52	W.....	130,000	150,000

* Not given.

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Dayton—Concluded.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
1	Monumental works	15	.....	52	W.....	\$10,000	\$20,000
1	Machine knife manufactory	21	.....	40	W.....	40,000	54,000
1	Overall manufactory	119	50	52	W.....	5,000	*
3	Paper-mills.....	23	1	48	W.....	} 155,000	225,000
	Paper-mills.....	19	.....	50	W.....		
	Paper-mills.....	35	18	52	W.....		
1	Plate and iron manufactory	192	2	49	W.....	200,000	300,000
10	Printing offices.....	189	58	52	W.....	149,500	144,000
2	Planing-mills	170	.....	52	W.....	} 91,000	256,000
	Planing-mills	6	.....	50	W.....		
1	Plow manufactory	1	.....	52	W.....	2,000	3,000
2	Rake manufactories.....	43	.....	46	W.....	} 275,000	300,000
	Rake manufactories.....	100	.....	36	W.....		
1	Steam pump manufactory	250	.....	36	2 M.....	150,000	250,000
1	Screw manufactory	45	118	34	2 M.....	150,000	100,000
1	Spice and coffee mill.....	12	13	52	W.....	100,000	600,000
1	Shirt factory	11	84	52	W.....	9,000	54,000
1	Suspender manufactory	2	6	52	W.....	3,000	15,000
1	Straw and binders board mills.....	77	.....	12	W.....	*	*
1	School furniture and opera seat m'fy.....	13	.....	50	W.....	20,000	30,000
1	Soap manufactories.....	2	.....	52	W.....	1,000	3,000
2	Stone yards	14	.....	26	W.....	8,000	13,000
1	Stationery manufactory.....	10	10	40	W.....	4,000	15,000
1	Tannery	30	.....	43	W.....	15,000	25,000
2	Trunk manufactories	4	.....	50	W.....	} 16,500	34,000
	Trunk manufactories	33	.....	52	W.....		
1	Umbrella manufactory	6	9	52	W.....	6,000	25,000.
1	Varnish manufactory	3	.....	52	W.....	2,500	2,500
1	Wheel manufactory	103	.....	50	W.....	200,000	140,000
	Blacksmiths..	78	.....	52	W.....	.....	.....
	Bricklayers.....	90	.....	40	W.....	.....	.....
	Carpenters	277	.....	45	2 M.....	.....	.....
	Hod-carriers.....	63	.....	38	W.....	.....	.....
	Street laborers	226	.....	38	W.....	.....	.....
	Stone cutters	77	.....	40	2 M.....	.....	.....
91	Total	5,677	815	.....	.....	\$5,144,450	\$9,520,782

Average number of weeks in operation, 46 19-37. Number of organized men, 2,800.

Miamisburg.

1	Brewery.....	6	.....	52	W.....	5,000	15,000
1	Carriage manufactory	67	.....	44	W.....	60,000	100,000
1	Cigar manufactory.....	2	21	4	W.....	800	8,000
1	Flour-mill	4	.....	52	W.....	15,000	48,000
1	Machine shop.....	180	.....	40	2 M.....	200,000	300,000
2	Paper-mills	55	33	52	W.....	140,000	298,000
3	Planing-mills	20	.....	52	W.....	19,000	42,000
2	Printing offices.....	7	3	52	W.....	5,500	8,500
1	Twine and cordage manufactory	100	50	40	W.....	175,000	650,000
1	Wheel manufactory.....	50	.....	52	W.....	80,000	75,000
	Bricklayers.....	6	.....	38	W.....	.....	.....
	Blacksmiths.....	5	.....	40	W.....	.....	.....
	Carpenters	20	.....	45	W.....	.....	.....
	Clerks in stores.....	33	.....	52	W.....	.....	.....
	Dressmakers .....	.....	6	50	W.....	.....	.....
	Hod-carriers	8	.....	38	W.....	.....	.....
	Plasterers	8	.....	38	W.....	.....	.....
	Painters.....	6	.....	40	W.....	.....	.....
	Plumber	1	.....	52	W.....	.....	.....
	Street laborers	8	.....	48	W.....	.....	.....
	Stonemasons.....	5	.....	38	W.....	.....	.....
	Tailors	10	.....	50	W.....	.....	.....
14	Total	601	113	.....	.....	\$700,300	\$1,544,500

Average number of weeks in operation during year, 42 1-22. Number of organized men, 200.

* Not given.

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Malta, Morgan County.

No of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
1	Brick yard	5	.....	26	W.....	\$2,500	\$3,000
1	Furniture manufactory.....	5	.....	52	W.....	3,500	4,000
1	Planing-mill	5	.....	52	W.....	4,000	15,000
1	Plow manufactory.....	100	.....	46	W.....	50,000	125,000
1	Tannery	11	.....	52	W.....	4,000	15,000
	Bricklayers	2	.....	38	W.....	.....	.....
	Blacksmiths.....	3	.....	52	W.....	.....	.....
	Clerks in stores.....	10	.....	52	W.....	.....	.....
	Carpenters	3	.....	38	2 M.....	.....	.....
	Dressmakers .....	.....	3	52	W.....	.....	.....
	Hod-carriers	2	.....	40	W.....	.....	.....
	Painters	4	.....	45	W.....	.....	.....
	Plasterers	3	.....	45	W.....	.....	.....
	Stonemasons.....	2	.....	38	W.....	.....	.....
	Street laborers.....	10	.....	40	W.....	.....	.....
	Tailors.....	2	.....	52	W.....	.....	.....
5	Total	167	3	.....	.....	\$64,000	\$162,000

Average number of weeks in operation, 45.

McConnellsville.

4	Cigar factories	27	.....	52	W.....	25,000	18,500
1	Flour-mill.....	5	.....	52	W.....	40,000	50,000
2	Printing offices.....	11	1	52	W.....	11,500	7,500
1	Roller-mill.....	5	.....	52	W.....	15,000	30,000
1	Sash and door manufactory	9	.....	36	W.....	10,000	25,000
	Bricklayers	2	.....	.....	.....	.....	.....
	Blacksmiths	5	.....	.....	.....	.....	.....
	Carpenters	12	.....	.....	.....	.....	.....
	Clerks in stores	10	.....	.....	.....	.....	.....
	Dressmakers .....	.....	14	.....	.....	.....	.....
	Hod-carriers	5	.....	.....	.....	.....	.....
	Plasterers	5	.....	.....	.....	.....	.....
	Painters	6	.....	.....	.....	.....	.....
	Stonemasons.....	4	.....	.....	.....	.....	.....
	Street laborers.....	25	.....	.....	.....	.....	.....
	Tailors.....	4	.....	.....	.....	.....	.....
9	Total	135	15	.....	.....	\$101,500	\$131,000

Average number of weeks in operation, 48 4-5.

Zanesville, Muskingum County.

1	Blast furnace	83	.....	40	W.....	150,000	500,000
1	Bakery	19	4	52	W.....	100,000	500,000
4	Breweries	30	.....	52	W.....	70,000	86,000
1	Barley-mill	5	.....	40	W.....	25,000	35,000
6	Carriage manufactories	51	.....	52	W.....	47,000	106,500
1	Canning works	3	60	20	W.....	7,000	8,000
1	Coffin works	43	6	50	W.....	45,000	70,000
1	Cigar manufactories	89	86	52	W.....	100,000	293,000
1	Engine works.....	71	1	52	W.....	160,000	175,000
2	Flour-mills	16	.....	52	W.....	49,000	185,000
1	Flour-pot manufactory	9	.....	52	W.....	4,000	18,000
1	Furniture manufactory.....	33	.....	52	W.....	18,000	35,000
11	Glass manufactories.....	299	.....	40	W.....	122,700	350,000
1	Hosiery manufactory.....	19	180	50	W.....	12,000	100,000
1	Machine shop.....	163	.....	51	W.....	51,370	223,531
3	Printing offices.....	46	13	52	W.....	70,000	41,000
3	Planing-mills	37	.....	50	W.....	47,000	154,000
	Planing-mills	38	.....	52	W.....		
1	Pottery	3	.....	52	W.....	1,000	2,000
1	Paint shop.....	4	.....	52	W.....	200	500

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Muskingum—Concluded.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
1	Rolling-mill	322	1	50	2 M.....	\$500,000	\$475,000
2	Stove foundries.....	61	.....	50	W.....	} 215,000	170,000
	Stove foundries.....	58	.....	50	2 M.....		
1	Soap factory.....	4	.....	52	W.....	1,000	4,000
1	Stone-quarry.....	20	.....	52	W.....	25,000	105,000
1	Tray manufactory.....	3	1	52	W.....	500	700
1	Tile works.....	141	45	52	W.....	150,000	350,000
2	Tanneries.....	15	.....	52	W.....	41,000	58,000
1	Wedge works.....	96	.....	52	W.....	150,000	150,000
1	Woolen-mill.....	32	45	47	W.....	50,000	100,000
	Blacksmiths.....	29	.....	52	W.....	.....	.....
	Carpenters.....	35	.....	45	W.....	.....	.....
	Clerks in stores.....	395	48	52	W.....	.....	.....
	Dress-makers.....	.....	25	50	W.....	.....	.....
	Hod-carriers.....	30	.....	38	W.....	.....	.....
	Plasterers.....	31	.....	38	W.....	.....	.....
	Painters.....	32	.....	40	W.....	.....	.....
	Plumbers.....	12	.....	40	W.....	.....	.....
	Stone-masons.....	24	.....	38	W.....	.....	.....
	Street laborers.....	48	.....	38	W.....	.....	.....
	Tailors.....	26	.....	50	W.....	.....	.....
57	Total	2,475	515	.....	.....	\$2,211,770	\$1,295,231

Average number of weeks in operation during the year, 47 28-41. Number of organized men, 337.

Oak Harbor, Ottawa County.

1	Carriage manufactory.....	7	.....	50	W.....	6,000	9,000
1	Flour-mill.....	2	.....	50	W.....	7,000	6,000
5	Planing mills.....	31	.....	42	M.....	} 114,000	166,000
	Planing mills.....	14	.....	40	M.....		
	Planing mills.....	64	.....	38	M.....		
	Planing-mills.....	42	.....	48	M.....		
	Bricklayers.....	2	.....	38	W.....	.....	.....
	Blacksmiths.....	7	.....	52	W.....	.....	.....
	Clerks in stores.....	27	.....	52	W.....	.....	.....
	Carpenters.....	25	.....	48	W.....	.....	.....
	Dress-makers.....	.....	10	52	W.....	.....	.....
	Plasterers.....	5	.....	40	W.....	.....	.....
	Painters.....	15	.....	40	W.....	.....	.....
	Tailors.....	5	6	50	W.....	.....	.....
7	Total	246	16	.....	.....	\$127,000	\$181,000

Average number of weeks in operation during the year, 45 5-14. Number of organized men, 115.

Port Clinton.

2	Carriage manufactories.....	11	.....	50	W.....	6,500	7,900
1	Flour-mill.....	5	.....	52	M.....	48,000	120,000
2	Planing-mills.....	10	.....	52	M.....	} 24,000	45,000
	Planing mills.....	6	.....	30	W.....		
	Bricklayers.....	1	.....	38	W.....	.....	.....
	Blacksmiths.....	2	.....	52	W.....	.....	.....
	Clerks in stores.....	20	5	52	W.....	.....	.....
	Carpenters.....	30	.....	40	W.....	.....	.....
	Dress-makers.....	.....	20	52	W.....	.....	.....
	Plasterers.....	10	.....	38	W.....	.....	.....
	Painters.....	15	.....	40	W.....	.....	.....
	Street laborers.....	2	.....	40	W.....	.....	.....
	Stonemason.....	1	.....	38	W.....	.....	.....
	Tailors.....	4	6	50	W.....	.....	.....
5	Total	117	31	.....	.....	\$78,500	\$172,900

Average number of weeks in operation during the year, 44 4-7. Number of organized men, 25.

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Melrose, Paulding County.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
1	Stave manufactory.....	19	.....	48	W.....	\$10,000	\$12,000
1	Saw mill.....	10	.....	32	W.....	8,000	23,000
1	Stirrup manufactory.....	2	.....	26	W.....	300	1,000
1	Tile manufactory.....	7	.....	20	W.....	2,500	2,500
4	Total.....	38	.....	.....	.....	\$20,800	\$33,500

Average number of weeks in operation during the year, 31½.

Paulding.

2	Stave and hoop manufactories	100	.....	52	M.....	} 80,000	190,000
	Stave and hoop manufactories	50	.....	52	W.....		
2	Saw-mills	8	.....	40	W.....	} 8,000	21,000
	Saw-mills	5	.....	52	W.....		
2	Printing offices.....	11	.....	52	W.....	5,500	7,000
	Bricklayers.....	15	.....	38	W.....	.....	.....
	Street laborers.....	15	.....	36	W.....	.....	.....
	Plasterers	4	.....	45	W.....	.....	.....
	Stonemasons.....	3	.....	40	W.....	.....	.....
	Carpenters.....	25	.....	45	W.....	.....	.....
	Hod-carriers	4	.....	36	W.....	.....	.....
	Blacksmiths.....	6	.....	52	W.....	.....	.....
	Tailors	2	.....	52	W.....	.....	.....
	Dress-makers.....	.....	8	52	D.....	.....	.....
	Clerks.....	25	.....	52	W.....	.....	.....
	Painters.....	5	.....	45	W.....	.....	.....
6	Total.....	278	8	.....	.....	\$93,500	\$218,000

Average number of weeks in operation during the year, 46 5-16.

Circleville, Pickaway County.

2	Brick yards.....	27	.....	28	W.....	3,500	13,500
1	Cooper shop.....	15	.....	52	W.....	6,000	17,000
2	Flour mills.....	13	.....	52	W.....	30,000	88,000
1	Machine shop.....	13	.....	52	W.....	9,000	15,000
1	Packing works	150	75	30	W.....	25,000	35,000
1	Planing-mill.....	14	.....	52	W.....	2,500	6,000
2	Printing offices.....	18	.....	52	W.....	10,000	10,000
1	Straw board manufactory.....	185	.....	48	2 M.....	400,000	400,000
1	Tannery	15	.....	52	W.....	25,000	25,000
	Barbers.....	40	.....	52	W.....	.....	.....
	Street laborers.....	185	.....	40	2 M.....	.....	.....
	Bricklayers.....	40	.....	38	2 M.....	.....	.....
	Plasterers	26	.....	38	2 M.....	.....	.....
	Painters	75	.....	40	2 M.....	.....	.....
	Stonemasons.....	18	.....	38	2 M.....	.....	.....
	Carpenters.....	80	.....	45	2 M.....	.....	.....
	Hod-carriers	35	.....	38	2 M.....	.....	.....
	Blacksmiths.....	20	.....	52	W.....	.....	.....
	Tailors	22	.....	50	W.....	.....	.....
	Dress-makers.....	.....	35	52	W.....	.....	.....
	Plumbers.....	8	.....	52	W.....	.....	.....
	Clerks in stores.....	218	22	52	W.....	.....	.....
12	Total.....	1,217	132	.....	.....	\$511,000	\$609,500

Average number of weeks in operation during the year, 45 15-22.

Waverly, Pike County.

1	Distillery.....	25	.....	52	W.....	50,000	60,000
1	Flour-mill.....	8	1	48	W.....	30,000	40,000
2	Planing-mills	4	.....	52	W.....	} 20,000	19,000
	Planing-mills	6	.....	20	W.....		

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Waverly—Concluded.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
2	Printing offices.....	4	.....	52	W.....	\$2,500	\$3,000
1	Spittoon manufactory.....	2	.....	26	W.....	700	1,000
1	Spoke and hub manufactory.....	15	.....	28	W.....	8,000	11,000
1	Tannery.....	5	.....	52	W.....	4,000	7,000
1	Woolen mill.....	9	1	26	W.....	5 000	4,500
	Bricklayers.....	2	.....	38	W.....	.....	.....
	Blacksmith.....	1	.....	52	W.....	.....	.....
	Clerks in stores.....	13	.....	52	W.....	.....	.....
	Carpenters.....	8	.....	40	W.....	.....	.....
	Dressmakers.....	.....	6	52	W.....	.....	.....
	Painters.....	5	.....	45	W.....	.....	.....
	Plasterers.....	3	.....	38	W.....	.....	.....
	Stonemasons.....	2	.....	38	W.....	.....	.....
	Street laborers.....	5	.....	40	W.....	.....	.....
	Tailors.....	2	.....	50	W.....	.....	.....
10	Total.....	119	8	.....	.....	\$120,200	\$145,500

Average number of weeks in operation during the year, 42 3-19.

Alwater, Portage County.

1	Carriage manufactory.....	4	.....	50	W.....	4,000	5,000
2	Potteries.....	19	.....	50	M.....	} 18,000	30,000
	Pottery.....	23	.....	45	M.....		
1	Stove manufactory.....	3	.....	52	W.....	1,000	4,000
	Bricklayer.....	1	.....	38	2 M.....	.....	.....
	Blacksmiths.....	4	.....	52	2 M.....	.....	.....
	Clerks in stores.....	3	.....	52	2 M.....	.....	.....
	Carpenters.....	8	.....	40	2 M.....	.....	.....
	Dressmakers.....	.....	5	50	2 M.....	.....	.....
	Painters.....	3	.....	45	2 M.....	.....	.....
	Stone masons.....	3	.....	40	2 M.....	.....	.....
4	Total.....	71	5	.....	.....	\$23,000	\$39,000

Average number of weeks in operation during the year, 46 8-11.

Kent.

1	Machinery manufactory.....	72	.....	52	M.....	150,000	100,000
2	Flour mills.....	30	.....	52	W.....	} 158,000	512,000
	Flour-mill.....	3	.....	40	W.....		
1	Dress goods manufactory.....	70	70	50	M.....	150,000	300,000
1	Planing-mill.....	10	.....	44	W.....	20,000	40,000
2	Printing offices.....	5	.....	52	W.....	6,500	4,250
	Laborers.....	25	.....	36	W.....	.....	.....
	Carpenters.....	12	.....	45	W.....	.....	.....
	Hod-carriers.....	20	.....	45	W.....	.....	.....
	Blacksmiths.....	1	.....	52	W.....	.....	.....
	Tailors.....	9	6	52	W.....	.....	.....
	Plasterers.....	2	.....	38	W.....	.....	.....
	Dressmakers.....	.....	12	52	D.....	.....	.....
	Clerks in stores.....	14	.....	52	W.....	.....	.....
7	Total.....	273	88	.....	.....	\$484,500	\$956,250

Average number of weeks in operation during the year, 47 2-7. Number of organized men, 120.

Ravenna.

1	Box manufactory.....	11	.....	52	W.....	25,000	26,000
2	Cereal Mills.....	35	30	45	2 M.....	} 146,000	400,000
	Cereal Mills.....	12	.....	52	W.....		

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Ravenna—Concluded.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
1	Cigar box manufactory.....	2	6	52	W.....	\$800	\$1,500
1	Cooperage.....	15	.....	45	W.....	2,000	3,000
2	Iron works.....	15	.....	50	W.....	} 10,000	5,000
	Iron works.....	12	.....	40	W.....		
1	Planing mill.....	14	.....	50	W.....	3,000	4,000
1	Pump manufactory.....	13	.....	50	W.....	2,000	3,000
1	Wagon manufactory.....	50	.....	52	W.....	150,000	75,000
1	Window glass works.....	68	.....	40	W.....	105,000	87,000
	Bricklayers.....	6	.....	38	W.....	.....	.....
	Blacksmiths.....	7	.....	52	W.....	.....	.....
	Clerks in stores.....	16	4	52	W.....	.....	.....
	Carpenters.....	15	.....	38	2 M.....	.....	.....
	Dressmakers.....	.....	16	52	W.....	.....	.....
	Hod carriers.....	6	.....	40	W.....	.....	.....
	Painters.....	20	.....	45	W.....	.....	.....
	Plasterers.....	10	.....	45	W.....	.....	.....
	Street laborers.....	30	.....	40	W.....	.....	.....
	Stone masons.....	3	.....	45	W.....	.....	.....
	Tailors.....	3	.....	52	W.....	.....	.....
11	Total.....	363	56	.....	.....	\$443,800	\$604,500

Average number of weeks in operation during the year, 46 15-22. Number of organized men, 100.

Eaton, Preble County.

1	Brick manufactory.....	16	.....	18	W.....	6,000	20,000
4	Cigar manufactories.....	19	20	50	W.....	} 11,000	38,000
	Cigar manufactories.....	18	6	48	W.....		
	Cigar manufactories.....	10	10	52	W.....	} 14,000	21,000
4	Planing-mills.....	10	.....	28	W.....		
	Planing-mills.....	9	.....	16	W.....		
	Planing-mills.....	2	.....	40	W.....		
	Planing-mills.....	4	.....	20	W.....	} 12,000	8,000
2	Printing offices.....	6	.....	52	W.....		
3	Stone quarries.....	16	.....	26	W.....	} 3,000	7,000
	Stone quarries.....	4	.....	25	W.....		
	Stone quarries.....	4	.....	18	W.....		
1	Tile manufactory.....	4	.....	26	W.....	5,000	6,000
	Shoemakers.....	6	.....	52	W.....	.....	.....
	Engineers.....	4	.....	52	W.....	.....	.....
	Day laborers.....	27	.....	52	W.....	.....	.....
	Bakers.....	3	.....	52	W.....	.....	.....
	Street laborers.....	16	.....	40	W.....	.....	.....
	Bricklayers.....	7	.....	38	W.....	.....	.....
	Plasterers.....	8	.....	38	W.....	.....	.....
	Painters.....	17	.....	40	W.....	.....	.....
	Stonemasons.....	14	.....	38	W.....	.....	.....
	Carpenters.....	21	.....	40	W.....	.....	.....
	Hod-carriers.....	9	.....	38	W.....	.....	.....
	Blacksmiths.....	13	.....	52	W.....	.....	.....
	Tailors.....	5	.....	45	W.....	.....	.....
	Dressmakers.....	.....	10	52	W.....	.....	.....
	Clerks in stores.....	14	2	52	W.....	.....	.....
15	Totals.....	285	48	.....	.....	\$51,000	\$100,000

Average number of weeks in operation during the year, 39 2-7. Number of organized men, 100.

Dupont, Putnam County.

1	Ax-handle manufactory.....	6	.....	50	W.....	2,000	3,000
1	Saw-mill.....	6	.....	50	W.....	3,000	5,000
1	Stave factory.....	31	.....	40	W.....	15,000	16,000
1	Tile yard.....	3	.....	50	W.....	2,000	3,000
	Carpenters.....	6	.....	45	W.....	.....	.....

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Dupont—Concluded.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
	Dressmakers		4	52	D.....		
	Clerk in store.....	1		52	W.....		
	Blacksmiths	2		52	W.....		
	Painters	2		40	W.....		
	Plasterers	1		44	W.....		
4	Total	58	4			\$22,000	\$27,000

Average number of weeks in operation during the year, 42 3-5.

Ottawa.

1	Beer bottling company.....	2		52	W.....	2,000	3,000
1	Bent works.....	9		52	W.....	10,000	12,000
1	Flour-mill.....	4		52	W.....	4,000	5,000
1	Grate manufactory	11		52	W.....	35,000	20,000
2	Printing offices.....	13		52	W.....	5,000	3,000
1	Planing-mill.....	5		51	W.....	8,000	6,000
1	Saw-mill	6		52	W.....	3,000	5,500
1	Wheel manufactory	35		49	W.....	8,000	10,000
	Street laborers.....	35		44	M.....		
	Bricklayers.....	5		38	W.....		
	Plasterers	6		38	W.....		
	Stonemasons.....	3		40	W.....		
	Carpenters	5		44	W.....		
	Tailors.....	4		52	W.....		
	Dressmakers		8	52	D.....		
	Clerks in stores.....	29	15	52	W.....		
9	Total	172	23			\$75,500	\$64,500

Average number of weeks in operation during the year, 48 3/4. Number of organized men, 75.

Mansfield, Richland County.

1	Brass foundry.....	30		52	2 M.....	30,000	35,000
2	Breweries	5		52	M.....	45,000	315,000
	Breweries	7	1	52	2 M.....		
1	Bending works.....	20		52	2 M.....	7,000	20,000
1	Cigar manufactory	42	150	52	2 M.....	6,000	80,000
1	China manufactory	7		52	2 M.....	3,000	4,000
1	Carriage manufactory.....	75	1	50	2 M.....	30,000	80,000
1	Candy and cracker manufactory.....	50	28	52	W.....	95,000	275,000
6	Foundries and machine shops.....	267	6	40	M.....	483,000	1,010,000
	Foundries and machine shops	31	1	6	W.....		
	Foundries and machine shops.....	100		48	2 M.....		
	Foundries and machine shops.....	142	1	50	2 M.....		
	Foundries and machine shops.....	10		50	W.....		
	Foundries and machine shops.....	11		50	W.....	160,000	450,000
2	Flour-mills.....	16		52	2 M.....		
	Flour-mills.....	40		52	W.....		
1	Plating works.....	15		52	2 M.....	3,000	12,000
2	Planing-mills	95		52	W.....	25,000	210,000
4	Printing offices.....	61	4	52	W.....	48,500	40,000
1	Roofing manufactory.....	10		52	2 M.....	8,000	28,000
3	Suspender manufactories.....	40	165	48	W.....	88,000	28,000
1	Soap works.....	3		52	W.....	5,000	5,000
	Bricklayers.....	12		40	2 M.....		
	Clerks in stores.....	32	29	52	W.....		
	Dressmakers		21	52	W.....		
	Hod-carriers	12		38	W.....		
	Plumbers	5		45	W.....		
	Plasterers	11		38	W.....		
	Stonemasons.....	10		38	W.....		
	Street laborers.....	10		40	W.....		
	Tailors	15		52	W.....		
28	Total	1,184	407			\$1,036,500	\$2,592,000

Average number of weeks in operation, 47 8-31. Number of organized men, 350.

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Chillicothe, Ross County.

No. of establishments.	Industrial establishments	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
2	Breweries	6	.....	52	W.....	\$70,000	\$58,000
	Breweries	7	.....	52	M.....		
2	Brick manufactories.....	18	.....	30	W.....	8,500	9,500
	Brick manufactories.....	19	.....	35	W.....		
1	Bosom board manufactory	11	.....	52	W.....	5,000	15,000
1	Book bindery.....	9	1	52	W.....	5,500	9,900
5	Carriage manufactories.....	26	.....	52	W.....	24,600	35,000
	Carriage manufactories.....	13	.....	45	W.....		
2	Canning works.....	52	51	8	W.....	14,000	53,000
	Canning works.....	35	15	35	W.....		
3	Cigar manufactories.....	17	.....	52	W.....	7,500	29,000
1	Electric light works.....	6	.....	52	M.....	50,000	55,000
1	Elevator	6	.....	50	W.....	3,000	6,000
3	Flour-mills	90	.....	52	W.....	69,000	106,000
1	Hosiery manufactory.....	2	7	35	W.....	1,200	7,000
1	Knife manufactory	8	.....	52	W.....	2,000	7,500
3	Machine shops.....	28	.....	52	W.....	31,000	62,000
	Machine shops	28	.....	51	W.....		
1	Paper-mill	66	7	52	W.....	54,000	95,000
5	Printing offices.....	42	6	52	W.....	46,000	47,500
3	Planing-mills	21	.....	44	W.....	49,000	98,000
	Planing-mills	6	.....	50	W.....		
	Planing-mills	35	.....	52	W.....		
1	Pork packery.....	18	.....	52	W.....	100,000	200,000
1	Railroad shop.....	411	3	52	M.....	.....	.....
2	Shoe manufactories.....	53	51	52	W.....	33,000	27,800
2	Tanneries	13	.....	52	W.....	64,000	110,000
	Tanneries	12	.....	40	W.....		
1	Tile manufactory	8	.....	40	W.....	3,000	5,000
	Bricklayers.....	15	.....	38	W.....	.....	.....
	Clerks in stores.....	164	.....	52	W.....	.....	.....
	Carpenters	46	.....	40	W.....	.....	.....
	Dressmakers .....	.....	35	52	W.....	.....	.....
	Hod-carriers	25	.....	38	W.....	.....	.....
	Plasterers	15	.....	38	W.....	.....	.....
	Plumbers	6	.....	40	W.....	.....	.....
	Stonemasons.....	10	.....	38	W.....	.....	.....
	Street laborers.....	39	.....	50	W.....	.....	.....
	Tailors	39	.....	40	W.....	.....	.....
42	Total	1,426	176	.....	.....	\$640,300	\$1,035,300

Average number of weeks in operation during the year, 45 6-13. Number of organized men, 275.

Fremont, Sandusky County.

1	Agricultural works.....	22	.....	52	W.....	1,800	1,800
2	Breweries	7	.....	52	W.....	190,000	103,500
	Breweries	15	7	52	M.....		
1	Bustle manufactory.....	25	.....	35	W.....	5,000	20,000
4	Carriage manufactories.....	59	.....	52	W.....	40,500	36,500
1	Carbon works.....	70	.....	52	W.....	25,000	50,000
1	Drop works	25	.....	52	W.....	25,000	20,000
1	Engine works.....	85	.....	52	W.....	100,000	85,000
2	Furniture manufactories.....	21	.....	52	W.....	6,500	9,500
1	Gas works	8	.....	52	2 M.....	50,000	80,000
1	Machine shop.....	20	.....	52	W.....	5,000	18,000
2	Printing offices.....	10	1	52	W.....	20,000	20,000
1	Plating works.....	18	.....	52	W.....	6,000	6,000
4	Planing-mills	53	.....	52	W.....	166,000	208,000
1	Shear manufactory.....	85	5	52	2 M.....	75,000	60,000
	Blacksmiths	19	.....	52	W.....	.....	.....
	Bricklayers	13	.....	38	W.....	.....	.....
	Carpenters	20	.....	40	W.....	.....	.....
	Clerks in stores.....	160	20	52	W.....	.....	.....
	Dressmakers .....	.....	20	52	W.....	.....	.....

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Fremont—Concluded.

No. of establishments.	Industrial establishments	Number of men em- ployed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital in- vested.	Value of annual pro- duct.
	Hod carriers	15	.....	38	W .....	.....	.....
	Plumbers	4	.....	52	W .....	.....	.....
	Painters	21	.....	38	W .....	.....	.....
	Plasterers	15	.....	38	W .....	.....	.....
	Stonemasons.....	14	.....	38	W .....	.....	.....
	Tailors	13	.....	50	W .....	.....	.....
23	Total	817	53	.....	.....	\$715,800	\$718,300

Average number of weeks in operation during the year, 48 3-26. Number of organized men, 350.

Portsmouth, Scioto County.

1	Box manufactory and book-bindery	15	22	52	W	3,000	15,000
1	Bread and cracker bakery	6	.....	52	W	1,000	2,400
1	Brewery	8	.....	52	W	25,000	70,400
2	Carriage manufactories.....	{ 6	.....	52	W	} 19,000	13,000
		10	.....	50	W		
6	Cigar factories	35	.....	52	2 M.....	7,400	30,400
3	Fire-brick manufactories	{ 35	.....	52	2 M.....	} 110,000	240,000
		140	.....	52	W		
1	Foundry and machine shop..	52	.....	52	W	138,000	75,000
2	Furniture factories.....	{ 70	.....	52	W	} 50,000	80,000
		30	.....	51	W		
2	Hub and spoke manufactories.....	124	.....	52	W	115,000	125,000
2	Knitting works.....	3	27	52	W	5,900	7,500
2	Ladies' fine shoe manufactories	{ 92	82	52	W	} 80,000	475,000
		77	50	52	2 M.....		
2	Planing-mills	{ 8	.....	52	W	} 11,000	85,000
		2	.....	62	W		
1	Pig-iron manufactory	177	.....	52	M.....	100,000	50,000
2	Printing offices.....	24	8	52	W	25,000	70,000
2	Railroad shops.....	211	.....	52	M.....	*	*
1	Saw mill.....	14	.....	35	W	5,000	10,000
1	Spring manufactory.....	30	.....	52	2 M.....	15,000	75,000
1	Steam laundry	3	8	52	W	3,000	5,000
1	Steel and iron manufactory	176	.....	40	M.....	150,000	300,000
1	Stone and marble works.....	40	.....	40	W	20,000	40,000
2	Stove manufactories	{ 65	.....	48	W	} 55,000	83,000
		6	.....	52	W		
1	Tannery	7	.....	52	W	15,000	25,000
1	Veneering manufactory	10	.....	82	W	7,500	45,000
1	Woolen mill.....	22	20	52	W	60,000	125,000
	Street laborers	40	.....	36	W .....	.....	.....
	Bricklayers	15	.....	36	W .....	.....	.....
	Blacksmiths.....	15	.....	52	W .....	.....	.....
	Carpenters	22	.....	45	W .....	.....	.....
	Clerks in stores.....	180	20	52	W .....	.....	.....
	Dressmakers .....	.....	22	52	W .....	.....	.....
	Hod carriers	16	.....	36	2 M.....	.....	.....
	Painters	20	.....	40	W .....	.....	.....
	Plasterers	16	.....	38	W .....	.....	.....
	Plumbers	8	.....	52	W .....	.....	.....
	Stonemasons.....	18	.....	40	W .....	.....	.....
	Tailors	20	.....	52	W .....	.....	.....
40	Total.....	1,868	259	.....	.....	\$1,020,800	\$2,046,700

Average number of weeks in operation during the year, 48 9-14. Number of organized men, 700.

Sciotoville.

1	Brick manufactory	75	.....	52	W.....	\$50,000	\$100,000
1	Total.....	75	.....	.....	.....	\$50,000	\$100,000

Average number of weeks in operation during the year, 52. *Not given.

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Fostoria, Seneca County.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
3	Blind and sash factories.....	45	.....	47	W.....	\$88,000	\$79,000
1	Bent works	30	.....	52	W.....	60,000	42,000
1	Foundry	5	.....	38	W.....	20,000	10,000
1	Machine and brass works	60	.....	52	W.....	75,000	65,000
1	Signal works	50	.....	52	W.....	32,000	25,000
1	Stave and barrel factory.....	60	.....	52	W.....	40,000	50,000
	Bricklayers.....	12	.....	38	2 M.....	.....	.....
	Clerks in stores	50	16	52	W.....	.....	.....
	Dressmakers .....	.....	25	52	W.....	.....	.....
	Hod carriers	12	.....	38	2 M.....	.....	.....
	Painters	30	.....	45	W.....	.....	.....
	Plasterers	11	.....	40	2 M.....	.....	.....
	Stonemasons.....	12	.....	38	2 M.....	.....	.....
	Street laborers	15	.....	40	M.....	.....	.....
	Tailors	13	.....	52	W.....	.....	.....
8	Total	405	41	.....	.....	\$310,000	\$271,000

Average number of weeks in operation, 45 13-15. Number of organized men, 130.

Tiffin.

1	Agricultural works	125	.....	52	2 M.....	\$89,500	\$160,000
2	Bent works.....	{ 6	.....	46	W.....	4,500	12,310
		{ 8	.....	30	2 M.....		
1	Box factory	28	.....	40	2 M.....	35,000	30,000
2	Breweries	20	.....	52	W.....	50,000	62,000
		{ 15	.....	48	2 M.....	101,000	108,000
5	Carriage manufactories.....	{ 28	.....	52	W.....		
		{ 75	1	50	M.....		
1	Chair factory.....	20	.....	52	W.....	17,127	16,000
1	Churn factory.....	48	.....	50	M.....	18,500	42,000
2	Flour mills	16	.....	52	W.....	65,000	160,000
2	Machine shops	{ 113	.....	52	2 M.....	125,000	140,000
		{ 25	.....	50	W.....		
1	Planing mill.....	25	.....	51	W.....	20,600	32,000
3	Printing offices.....	30	.....	52	W.....	20,000	24,000
1	Stove works	38	.....	30	2 M.....	25,000	60,000
1	Shoe factory.....	7	3	52	W.....	6,000	20,000
1	Woolen mill	40	40	52	W.....	60,000	100,000
24	Total	667	44	.....	.....	\$687,227	\$966,310

Average number of weeks in operation during the year, 47 1/2. Number of organized men, 400.

Anna, Shelby County.

1	Handle factory	8	.....	52	W.....	\$5,000	\$8,000
2	Spoke and bent manufactories	39	.....	52	W.....	18,000	25,000
3	Total	47	.....	.....	.....	\$23,000	\$33,000

Average number of weeks in operation during the year, 52.

Sidney.

1	Brewery.....	15	.....	52	M.....	50,000	75,000
4	Cigar factories.....	11	2	52	W.....	3,000	9,700
3	Carriage manufactories	30	.....	52	W.....	20,600	26,000
2	Elevators.....	9	.....	52	W.....	18,000	10,000
1	Foundry and machine shop	30	.....	52	W.....	30,000	60,000
2	Flour mills.....	{ 7	.....	52	W.....	38,000	112,000
		{ 3	.....	52	M.....		
1	Laundry	3	3	52	W.....	350	400

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Sidney—Concluded.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
3	Printing offices.....	11	3	52	W.....	\$20,000	\$17,000
1	Plow manufactory.....	5	.....	52	W.....	2,000	3,000
2	Planing-mills.....	39	.....	46	W.....	53,000	80 000
1	Pork packing establishment.....	5	.....	52	W.....	25,000	75,000
2	Spoke manufactories.....	45	.....	52	W.....	18,000	50,000
1	Scraper works.....	45	.....	52	W.....	} 65,000	115,000
	Scraper works.....	16	.....	45	W.....		
2	Spoke and wheel works.....	73	.....	52	W.....	80,000	118,000
1	Saw-mill.....	20	.....	52	W.....	20,000	25,000
1	Stove works.....	37	.....	51	W.....	30,000	40,000
1	School furniture factory.....	115	.....	52	W.....	125,000	350,000
1	Tannery.....	8	.....	52	W.....	18,000	40,000
	Bricklayers.....	5	.....	38	W.....	.....	.....
	Clerks in stores.....	48	13	52	W.....	.....	.....
	Dressmakers.....	.....	12	52	W.....	.....	.....
	Hod-carriers.....	8	.....	38	W.....	.....	.....
	Plasterers.....	8	.....	38	W.....	.....	.....
	Stonemasons.....	4	.....	44	W.....	.....	.....
	Tailors.....	10	.....	52	W.....	.....	.....
31	Totals.....	610	33	.....	.....	\$616,150	\$1,216,100

Average number of weeks in operation during the year, 49 17-27. Number of organized men, 200.

Alliance, Stark County.

1	Boiler shop.....	4	.....	50	M.....	1,000	3,000
1	Flour-mill.....	5	.....	10	W.....	23,000	65,000
1	Foundry.....	8	.....	52	M.....	5,000	12,000
2	Machine shops.....	3	.....	50	W.....	} 8,300	16,000
	Machine shops.....	4	.....	52	W.....		
2	Planing-mills.....	12	.....	52	M.....	} 14,000	58,000
	Planing-mills.....	6	.....	52	W.....		
	Bricklayers.....	6	.....	38	W.....	.....	.....
	Blacksmiths.....	7	.....	52	W.....	.....	.....
	Clerks in stores.....	16	8	52	W.....	.....	.....
	Carpenters.....	27	.....	40	W.....	.....	.....
	Dressmakers.....	.....	20	52	W.....	.....	.....
	Painters.....	15	.....	45	W.....	.....	.....
	Plasterers.....	4	.....	38	W.....	.....	.....
	Stonemasons.....	5	.....	38	W.....	.....	.....
	Tailors.....	6	12	52	W.....	.....	.....
7	Total.....	128	40	.....	.....	\$51,300	\$154,000

Average number of weeks in operation during the year, 47 13-16. Number of organized men, 100.

Canton.

8	Agricultural implements manufactories	171	40	M.....	} 2,100,500	2,579,000
	Agricultural implements manufactories	38	.....	46	W.....	
	Agricultural implements manufactories	630	.....	44	M.....	
	Agricultural implements manufactories	20	.....	41	W.....	
	Agricultural implements manufactories	12	.....	48	2 M.....	
	Agricultural implements manufactories	160	.....	50	W.....	
	Agricultural implements manufactories	31	33	M.....	} 36,000	45,000
1	Box factory.....	17	.....	52	M.....	
1	Book-case manufactory.....	30	.....	52	W.....	
1	Chair manufactory.....	15	.....	52	M.....	
1	Contractor and builder.....	18	.....	40	2 M.....	
2	Cuttlery works.....	42	.....	48	2 M.....	
	Cuttlery works.....	30	4	50	2 M.....	} 50,000	75,000
1	Car works.....	35	.....	52	2 M.....	
1	Carriage works.....	21	.....	52	2 M.....	
1	Force pump manufactory.....	24	4	40	M.....		

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.
Canton—Concluded.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
1	Feed cutter manufactory	23	1	30	2 M.....	\$18,662 07	\$14,410 72
1	Glass works	125	15	46	W.....	50,000 00	125,000 00
1	Hardware manufactory.....	15	1	40	W.....	40,000 00	40,000 00
1	Iron works.....	86	.....	52	2 M.....	50,000 00	80,000 00
1	Iron bridge works.....	197	.....	52	2 M.....	106,000 00	300,000 00
1	Malleable iron works	122	1	52	W.....	90,000 00	140,000 00
2	Machine shops.....	18	.....	52	M.....	} 42,000 00	55,000 00
	Machine shops.....	25	.....	48	W.....		
1	Printing office	32	3	52	W.....	21,000 00	21,000 00
2	Planing-mills	95	1	50	M.....	48,000 00	80,000 00
1	Soap works.....	29	7	45	M.....	50,000 00	140,000 00
1	Spring works.....	70	.....	50	2 M.....	50,000 00	110,000 00
1	Steel works.....	124	.....	52	2 M.....	238,082 00	122,887 00
1	Saw-works	14	.....	52	M.....	25,000 00	21,000 00
1	Safe and lock works	340	.....	52	2 M.....	180,000 00	500,000 00
1	Stone ware manufactory.....	25	.....	52	M.....	25,000 00	35,000 00
1	Street lighting company.....	14	.....	52	M.....	30,000 00	40,000 00
35	Totals.....	2,648	37	.....	.....	\$3,335,244 07	\$4,705,297 72

Average number of weeks in operation during the year, 47 18-33.
Number of organized men, 510. Number of organized women, 8.

Minerva.

1	Bottle works	45	.....	52	2 M.....	5,000	6,000
1	Car manufactory.....	126	.....	52	M.....	55,000	500,000
1	Creamery	4	.....	35	M.....	2,000	3,000
1	Flour-mill.....	8	.....	52	W.....	33,000	120,000
1	Furnace manufactory.....	12	.....	52	W.....	9,000	7,000
1	Printing office	2	.....	52	W.....	1,600	1,400
1	Planing-mill	5	.....	52	W.....	3,500	5,000
	Blacksmiths	4	.....	52	W.....	.....	.....
	Bricklayers.....	4	.....	38	W.....	.....	.....
	Clerks in stores	16	10	52	W.....	.....	.....
	Carpenters.....	4	.....	40	W.....	.....	.....
	Dressmakers .....	.....	7	52	W.....	.....	.....
	Plumbers	4	.....	38	W.....	.....	.....
	Plasterer	1	.....	38	W.....	.....	.....
	Painters	6	.....	36	W.....	.....	.....
	Street laborers.....	11	.....	36	W.....	.....	.....
	Stonemasons.....	4	.....	38	W.....	.....	.....
	Tailors	7	.....	50	W.....	.....	.....
7	Total.....	264	17	.....	.....	\$109,100	\$642,400

Average number of weeks in operation during the year, 45 7-18.

Akron, Summit County.

2	Agricultural works	1,186	.....	45	2 M.....	3,100,000	2,600,000
1	Belt manufactory.....	22	.....	52	W.....	35,000	100,000
1	Br-wery	12	.....	52	W.....	15,000	10,000
1	Boiler manufactory.....	46	.....	52	W.....	25,000	75,000
1	Cracker manufactory.....	10	4	50	W.....	29,500	35,000
2	Carriage manufactories	26	.....	52	W.....	} 33,000	56,500
	Carriage manufactories.....	8	.....	50	W.....		
1	Desk and mantle manufactory.....	10	.....	52	2 M.....	9,000	12,000
1	Forge works.....	26	.....	52	2 M.....	65,000	75,000
1	Flour-barrel manufactory.....	13	.....	48	W.....	1,500	15,517
1	Fire-brick manufactory	18	.....	52	2 M.....	80,000	25 000
1	Gear works	30	.....	52	2 M.....	20,000	60,000
1	Hardware manufactory.....	12	1	52	2 M.....	25,000	*
1	Iron works.....	325	.....	50	2 M.....	400,000	700,000

* Not given.

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.
Akron—Concluded.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
2	Machine works.....	{ 140	.....	52	W.....	\$280,000	\$300,000
		150	.....	52	W.....		
1	Milling company	225	38	52	2 M.....	1,500,000	2,000,000
2	Polishing works	{ 8	.....	40	W.....	9,000	21,000
		8	.....	37	2 M.....		
2	Printing offices.....	128	59	52	W.....	135,000	175,000
1	Pottery	18	.....	45	2 M.....	20,000	20,000
2	Planing-mills	{ 52	.....	48	2 M.....	113,000	205,000
		36	.....	50	2 M.....		
1	Roofing-tile works	56	.....	52	2 M.....	25,000	50,000
1	Rubber manufactory	219	170	52	2 M.....	200,000	300,000
7	Sewer-pipe manufactories	{ 150	5	45	M.....	662,000	299,000
		121	.....	52	M.....		
		49	.....	45	2 M.....		
		45	.....	51	M.....		
1	Shirt factory .....	.....	16	52	2 M.....	250,000	*
1	Twine and cordage manufactory	45	30	36	2 M.....	100,000	200,000
1	Varnish manufactory	13	.....	52	W.....	70,000	70,000
1	Wood-turning enameling works	81	8	52	W.....	50,000	77,352
	Clerks in stores.....	.....	50	52	W.....	.....	.....
38	Totals	3,279	381	.....	.....	7,202,000	7,487,369

Average number of weeks in operation, 49 7-17. Number of organized men, 1,110.

Girard, Trumbull County.

1	Blast furnace	115	.....	40	M.....	150,000	725,000
1	Rolling mill	354	.....	52	2 M.....	300,000	800,000
1	Stove works	12	.....	40	2 M.....	15,000	20,000
1	Tannery.....	50	.....	52	W.....	100,000	150,000
	Bricklayers	2	.....	38	2 M.....	.....	.....
	Carpenters	4	.....	40	2 M.....	.....	.....
	Clerks in stores	23	2	52	2 M.....	.....	.....
	Dressmakers .....	.....	13	52	2 M.....	.....	.....
	Plasterer	1	.....	38	2 M.....	.....	.....
	Stone mason.....	1	.....	38	2 M.....	.....	.....
4	Totals	562	15	.....	.....	\$565,000	\$1,695,000

Average number of weeks in operation during the year, 44 1-5.

Niles.

1	Boiler works.....	35	.....	50	2 M.....	\$30,000	\$40,000
1	Furnace.....	53	.....	45	2 M.....	150,000	400,000
1	Fire-brick works.....	16	.....	50	2 M.....	25,000	50,000
1	Iron-roofing works	5	.....	52	2 M.....	5,000	10,000
1	Machine shop.....	20	.....	50	M.....	8,000	1,400
2	Rolling mills.....	{ 600	.....	50	2 M.....	167,000	1,050,000
		117	.....	38	2 M.....		
7	Totals	846	.....	.....	.....	\$380,000	\$1,551,400

Average number of weeks in operation during the year, 47 6-7. Number of organized men, 258.

Warren.

2	Brick yards	{ 7	.....	28	2 M.....	8,000	11,500
		15	.....	52	2 M.....		
1	Carriage works.....	25	.....	52	W.....	11,500	19,000
1	Flour-mill.....	3	.....	52	W.....	15,000	30,000

* Not given.

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Warren—Concluded.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
3	Machine shops	{ 2 .....	.....	52	W	\$85,000	\$82,000
		40 .....	.....	52	2 M		
		18 .....	.....	52	M		
1	Oil works	20 .....	.....	52	W	120,000	250,000
2	Planing mills	{ 30 .....	.....	52	M	27,500	78,000
		3 .....	.....	35	M		
		13	7	52	W		
3	Printing offices	20	5	40	W	30,000	60,000
1	Paint works	25	.....	38	W	25,000	38,000
1	Stove manufactory	15	.....	52	W	25,000	20,000
1	Table manufactory	4	.....	28	W	4,000	4,500
1	Woolen mill	14	.....	38	W		
	Bricklayers	18	.....	52	W		
	Blacksmiths	63	14	52	W		
	Clerks in stores	24	.....	40	W		
	Carpenters .....	.....	8	52	W		
	Dressmakers	21	.....	38	W		
	Hod carriers	9	.....	40	W		
	Plasterers	7	.....	45	W		
	Painters	16	.....	45	W		
	Plumbers	23	.....	38	W		
	Stonemasons	3	.....	38	W		
	Street laborers	28	13	50	W		
	Tailors						
17	Total	471	47			\$368,500	\$613,000

Average number of weeks in operation during the year, 45 2-27. Number of organized men, 24.

Canal Dover, Tuscarawas County.

1	B'ast furnace	60	.....	52	M	100,000	270,000
1	Furniture manufactory	55	.....	52	W	100,000	75,000
1	Flour mill	22	.....	40	2 M	172,000	335,200
1	Fire-brick manufactory	20	.....	30	M	40,000	50,000
4	Total	157	.....			\$412,000	\$730,20

Average number of weeks in operation during the year, 43½.

Dennison, Tuscarawas County.

1	Flour-mill	2	.....	26	W	12,000	40,000
1	Railroad shop	668	3	52	M		
2	Totals	670	3			\$12,000	\$40,000

Average number of weeks in operation during the year, 39. Number of organized men, 300.

Newcomerstown.

1	Printing office	4	.....	52	W	3,000	5,000
1	Planing-mill	5	.....	50	W	6,000	5,000
2	Totals	9	.....			\$9,000	\$10,000

Average number of weeks in operation, 51.

Uhrichsville.

1	Brick yard	15	.....	48	W	8,000	6,000
1	Fire-clay works	42	.....	52	M	25,000	65,000
1	Planing mill	5	.....	52	W	8,000	6,000
1	Tile works	8	.....	40	W	7,000	6,000

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Uhrichsville—Concluded.

No. of establishments.	Industrial establishments	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
	Street laborers.....	23	.....	38	W.....	.....	.....
	Carpenters.....	3	.....	40	W.....	.....	.....
	Painters.....	2	.....	38	W.....	.....	.....
	Stonemasons.....	3	.....	38	W.....	.....	.....
	Blacksmiths.....	3	.....	52	W.....	.....	.....
	Tailor.....	1	.....	50	W.....	.....	.....
	Dress-makers.....	.....	5	52	W.....	.....	.....
	Clerks in stores.....	4	.....	52	W.....	.....	.....
4	Total.....	109	5	.....	.....	\$48,000	\$83,000

Average number of weeks in operation during the year, 46.

Marysville, Union County.

1	Brewery.....	1	.....	52	W.....	8,000	1,500
1	Broom factory.....	2	.....	42	W.....	200	1,600
4	Carriage manufactories.....	24	.....	52	W.....	10,500	17,000
2	Marble works.....	10	.....	52	W.....	4,000	8,000
2	Printing offices.....	8	1	52	W.....	8,000	9,500
4	Planing-mills.....	21	.....	52	W.....	32,000	81,500
	Planing-mills.....	3	.....	48	W.....		
	Planing-mills.....	4	.....	40	W.....		
2	Tin shops.....	4	.....	52	W.....	4,000	9,000
1	Tile works.....	4	.....	32	W.....	2,000	1,500
1	Tub and pail manufactory.....	9	.....	52	W.....	15,000	30,000
	Bricklayers.....	5	.....	38	2 M.....	.....	.....
	Blacksmiths.....	11	.....	52	W.....	.....	.....
	Clerks in stores.....	87	13	52	W.....	.....	.....
	Carpenters.....	10	.....	45	W.....	.....	.....
	Dressmakers.....	.....	20	52	W.....	.....	.....
	Hod-carriers.....	6	.....	38	W.....	.....	.....
	Plasterers.....	7	.....	40	W.....	.....	.....
	Painters.....	10	.....	40	W.....	.....	.....
	Stonemasons.....	6	.....	40	2 M.....	.....	.....
	Street laborers.....	3	.....	45	M.....	.....	.....
	Tailors.....	8	.....	52	W.....	.....	.....
18	Total.....	273	34	.....	.....	\$78,700	\$159,600

Average number of weeks in operation during the year, 46 4-11.

Milford Center.

1	Carriage manufactory.....	6	.....	52	M.....	3,000	5,000
1	Flour-mill.....	3	.....	52	W.....	10,000	30,000
1	Tile manufactory.....	4	.....	52	W.....	5,000	14,000
	Bricklayers.....	2	.....	36	W.....	.....	.....
	Blacksmiths.....	5	.....	52	W.....	.....	.....
	Clerks in stores.....	23	1	52	W.....	.....	.....
	Carpenters.....	9	.....	45	W.....	.....	.....
	Dressmakers.....	.....	1	52	W.....	.....	.....
	Hod-carriers.....	1	.....	36	W.....	.....	.....
	Plasterers.....	1	.....	38	W.....	.....	.....
	Painters.....	4	.....	40	W.....	.....	.....
	Stonemasons.....	2	.....	40	W.....	.....	.....
	Tailors.....	2	.....	52	W.....	.....	.....
3	Total.....	62	2	.....	.....	\$18,000	\$49,000

Average number of weeks in operation during the year, 46 1-13.

Plain City.

1	Carriage manufactory.....	7	.....	52	W.....	2,000	4,000
1	Flour-mill.....	2	.....	52	W.....	15,000	60,000
1	Furniture manufactory.....	25	.....	40	W.....	15,000	30,000

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Plain City—Concluded.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
1	Printing office.....	3	.....	52	W.....	\$1,500	\$3,000
1	Paper-mill.....	33	.....	52	W.....	35,000	40,000
	Bricklayers.....	3	.....	36	W.....	.....	.....
	Blacksmiths.....	5	.....	52	W.....	.....	.....
	Clerks in stores.....	23	3	52	W.....	.....	.....
	Carpenters.....	12	.....	45	2 M.....	.....	.....
	Dressmakers.....	.....	10	52	W.....	.....	.....
	Hod-carriers.....	2	.....	36	W.....	.....	.....
	Plasterers.....	2	.....	38	W.....	.....	.....
	Painters.....	6	.....	40	W.....	.....	.....
	Stonemasons.....	2	.....	40	W.....	.....	.....
	Street laborers.....	3	.....	36	W.....	.....	.....
	Tailors.....	5	.....	52	W.....	.....	.....
5	Total.....	133	13	.....	.....	\$68,000	\$137,000

Average number of weeks in operation during the year, 45 7-16.

Van Wert, Van Wert County.

1	Carriage manufactory.....	17	.....	52	W.....	8,000	15,000
3	Flour-mills.....	15	.....	52	W.....	56,000	128,000
1	Machine shop.....	16	.....	52	W.....	10,000	10,000
1	Oil well supplies.....	40	.....	52	W.....	5,000	200,000
2	Planing-mills.....	6	.....	40	W.....	} 42,000	165,000
	Planing-mills.....	11	.....	52	W.....		
2	Printing offices.....	11	.....	52	W.....	8,000	11,500
1	Railroad shop.....	89	.....	52	W.....	.....	.....
2	Stave manufactories.....	48	.....	34	W.....	} 65,000	180,000
	Stave manufactories.....	90	.....	52	W.....		
1	Spoke and hub manufactory.....	8	.....	52	W.....	10,000	8,000
3	Tile manufactory.....	34	.....	52	W.....	11,000	17,500
	Bricklayers.....	8	.....	38	W.....	.....	.....
	Blacksmiths.....	13	.....	52	W.....	.....	.....
	Clerks in stores.....	67	15	52	W.....	.....	.....
	Dress-makers.....	.....	15	50	W.....	.....	.....
	Hod-carriers.....	10	.....	38	W.....	.....	.....
	Plumbers.....	3	.....	52	W.....	.....	.....
	Plasterers.....	10	.....	38	W.....	.....	.....
	Stonemasons.....	9	.....	38	W.....	.....	.....
	Street laborers.....	17	.....	40	W.....	.....	.....
17	Total.....	522	30	.....	.....	\$215,000	\$735,000

Average number of weeks in operation during the year, 47 5-21. Number of organized men, 250.

Harmar, Washington County.

1	Boiler works.....	5	.....	52	W.....	3,000	8,000
1	Flour-mill.....	7	.....	52	W.....	8,000	35,000
1	Machine shop.....	8	.....	52	W.....	10,000	8,000
1	Plow works.....	40	.....	48	W.....	80,000	40,000
4	Total.....	60	.....	.....	.....	\$51,000	\$91,000

Average number of weeks in operation during the year, 51.

Marietta.

1	Boat manufactory.....	15	.....	52	W.....	3,000	8,000
1	Brewery.....	6	.....	52	W.....	25,000	24,000
2	Brick manufactories.....	22	.....	35	W.....	6,500	13,000
2	Carriage manufactories.....	19	.....	52	W.....	10,000	19,000
5	Cigar factories.....	26	.....	35	W.....	21,000	12,500
1	Chair manufactory.....	409	12	50	W.....	225,000	250,000
2	Flour-mills.....	21	.....	52	W.....	55,000	175,000

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.
Marietta—Concluded.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
3	Planing mills.....	29	.....	52	W.....	\$15,500	\$28,000
4	Printing offices.....	28	2	52	W.....	34,500	24,000
1	Stove foundry.....	44	1	40	W.....	40 000	50,000
1	Spoke and bent manufactory.....	20	.....	40	W.....	25,000	24 000
3	Tanneries.....	21	.....	52	W.....	28,000	30,000
	Bricklayers.....	12	.....	36	W.....	.....	.....
	Blacksmiths.....	13	.....	52	W.....	.....	.....
	Carpenters.....	15	.....	45	W.....	.....	.....
	Clerks in stores.....	85	15	52	W.....	.....	.....
	Dressmakers.....	.....	12	52	W.....	.....	.....
	Hod carriers.....	12	.....	36	W.....	.....	.....
	Plasterers.....	11	.....	40	W.....	.....	.....
	Painters.....	18	.....	38	W.....	.....	.....
	Street laborers.....	20	.....	36	W.....	.....	.....
	Stone masons.....	9	.....	40	W.....	.....	.....
	Tailors.....	9	.....	52	W.....	.....	.....
26	Totals.....	864	42	.....	.....	\$488,500	\$657,500

Average number of weeks in operation, 45 8-23. Number of organized men, 119.

Wooster, Wayne County.

1	Brush manufactory.....	13	7	52	2 M.....	25,000	35,000
1	Furniture manufactory.....	4	.....	52	W.....	2,000	4,000
2	Flour mills.....	{ 22	.....	52	M.....	.....	.....
		{ 10	.....	50	W.....	60,000	80,000
1	Harness and pad manufactory.....	9	.....	50	2 M.....	10,000	20,000
2	Planing mills.....	{ 26	.....	52	W.....	75,000	125,000
		{ 20	.....	50	W.....	.....	.....
6	Printing offices.....	30	1	52	W.....	34,000	32,000
1	Whip manufactory.....	43	15	52	2 M.....	50,000	75,000
	Blacksmiths.....	7	.....	52	W.....	.....	.....
	Bricklayers.....	2	.....	40	W.....	.....	.....
	Clerks in stores.....	57	17	52	W.....	.....	.....
	Carpenters.....	7	.....	50	W.....	.....	.....
	Dressmakers.....	.....	36	52	W.....	.....	.....
	Milliners.....	15	.....	52	W.....	.....	.....
	Plumbers.....	3	.....	45	W.....	.....	.....
	Street laborers.....	111	.....	40	W.....	.....	.....
	Stonemasons.....	13	.....	40	W.....	.....	.....
	Tailors.....	5	.....	50	W.....	.....	.....
14	Tota's.....	397	76	.....	.....	\$256,000	\$371,000

Average number of weeks in operation during the year, 49 4-19. Number of organized men, 120.

Bryan, Williams County.

2	Brick manufactories.....	{ 10	.....	40	W.....	.....	.....
		{ 9	.....	25	W.....	5,400	8,200
1	Brewery.....	8	.....	52	W.....	60,000	42,000
1	Creamery.....	18	2	32	W.....	10 000	35,000
1	Cigar factory.....	6	.....	52	W.....	3,000	7,000
2	Carriage manufactories.....	{ 3	.....	50	W.....	.....	.....
		{ 10	.....	52	2 M.....	14,800	13,000
2	Flour mills.....	{ 3	.....	52	2 M.....	.....	.....
		{ 2	.....	52	W.....	14,000	35,000
1	Planing mill.....	12	.....	40	W.....	10,000	26,000
1	Plow manufactory.....	50	.....	52	M.....	50,000	50,000
2	Printing offices.....	6	.....	52	W.....	18,000	18,000
1	Saw mill.....	16	.....	40	M.....	8,000	12,000
1	Wheelbarrow manufactory.....	29	.....	35	W.....	36,000	55,000
15	Totals.....	182	2	.....	.....	\$229,200	\$291,200

Average number of weeks in operation, 44 5-7.

TABLE SHOWING THE NUMBER OF PERSONS EMPLOYED, ETC.—Continued.

Carey, Wyandot County.

No. of establishments.	Industrial establishments.	Number of men employed.	Number of women employed.	Number of weeks in operation during the year.	How often paid.	Amount of capital invested.	Value of annual product.
1	Brick and tile manufactory.....	22	.....	28	W.....	\$10,000	\$11,500
1	Cigar factory.....	3	4	52	W.....	500	7,000
1	Churn manufactory.....	9	.....	52	W.....	4,000	50,000
1	Flour mill.....	10	.....	52	W.....	20,000	120,000
1	Foundry.....	4	.....	52	W.....	8,000	8,500
1	Lime manufactory.....	22	.....	52	W.....	10,000	15,000
2	Stone-crushing works.....	10	.....	36	W.....	8,000	18,000
		12	.....	33	W.....		
1	Sash and door factory.....	10	.....	52	W.....	10,000	25,000
1	Wagon and buggy works.....	8	.....	52	W.....	8,000	8,000
1	Woolen mill.....	2	4	35	W.....	5,000	7,000
	Chore laborers.....	50	.....	52	W.....	.....	.....
	Street laborers.....	20	.....	36	W.....	.....	.....
	Bricklayers.....	8	.....	36	W.....	.....	.....
	Plasterers.....	7	.....	38	W.....	.....	.....
	Painters.....	5	.....	40	W.....	.....	.....
	Stone masons.....	8	.....	40	W.....	.....	.....
	Carpenters.....	15	.....	45	W.....	.....	.....
	Hod carriers.....	7	.....	36	W.....	.....	.....
	Blacksmiths.....	5	.....	52	W.....	.....	.....
	Tailors.....	4	5	52	W.....	.....	.....
	Dress-makers.....	.....	6	52	W.....	.....	.....
	Plumbers.....	5	.....	52	W.....	.....	.....
	Clerks in stores.....	11	.....	52	W.....	.....	.....
211	Totals.....	257	19	.....	.....	\$83,500	\$270,500

Average number of weeks in operation during the year, 44 23-24.

Upper Sandusky.

1	Flour mill.....	4	.....	52	W.....	\$15,000	\$16,000
1	Machine shop.....	10	.....	30	W.....	25,000	25,000
1	Planing mill.....	18	.....	40	M.....	20,000	21,000
2	Printing offices.....	20	.....	52	W.....	15,000	16,000
1	Straw-board manufactory.....	60	.....	50	W.....	60,000	65,000
	Plasterers.....	8	.....	40	W.....	.....	.....
	Carpenters.....	9	.....	40	W.....	.....	.....
	Hod carriers.....	12	.....	40	W.....	.....	.....
	Tailors.....	12	.....	50	W.....	.....	.....
	Dressmakers.....	.....	15	52	W.....	.....	.....
	Clerks in stores.....	30	.....	52	W.....	.....	.....
6	Totals.....	183	15	.....	.....	\$135,000	\$143,000

Average number of weeks in operation during the year, 45 $\frac{3}{8}$.

TABLE SHOWING NUMBER OF MEN EMPLOYED IN AND AROUND COAL MINES.—TIME WORKED.—HOW OFTEN PAID.

Counties.	No. of men em- ployed.	Time worked.	How often paid.	Counties.	No. of men em- ployed.	Time worked.	How often paid
Athens	2,398	33	Twice a month.	Muskingum	500	46	Twice a month.
Belmont	1,305	45	Twice a month.	Mahoning	740	43	Twice a month.
Columbiana.....	1,057	44	Twice a month.	Morgan	35	35	Twice a month.
Coshocton.....	227	47	Twice a month.	Noble	12	34	Twice a month.
Carroll	620	46	Twice a month.	Perry.....	3,600	32	Twice a month.
Guernsey	925	40	Twice a month.	Portage.....	246	33	Twice a month.
Gall'a	60	40	Twice a month.	Stark	1,876	35	Twice a month.
Holmes	37	35	Twice a month.	Summit	393	34	Twice a month.
Hocking.....	1,600	40	Twice a month.	Tuscarawas	1,078	33	Twice a month.
Harrison	78	35	Twice a month.	Trumbull	629	34	Twice a month.
Jackson	2,340	36	Twice a month.	Vinton	200	40	Twice a month.
Jefferson	572	42	Twice a month.	Washington	9	40	Twice a month.
Lawrence	465	47	Twice a month.	Wayne	332	40	Twice a month.
Medina.....	791	44	Twice a month.				
Meigs.....	613	37	Twice a month.	Total	22,738	.....

TABLE SHOWING THE AMOUNT OF WAGES PAID TO MEN EMPLOYED IN AND AROUND COAL MINES, AND THE HOURS THEY LABOR.

Athens County.

Occupation.	No. of men employed.	Wages per day.	Hours of labor daily.	No. of men employed.	Wages per day.	Hours of labor daily.	No. of men employed.	Wages per day.	Hours of labor daily.
Blacksmiths	2	\$2 00	10	1	\$1 55	9	1	\$2 50	9
Blacksmiths	1	2 25	9	.....	.....	.....	.....	.....	.....
Book-keeper	1	1 54	10	.....	.....	.....	.....	.....	.....
Carpenter.....	1	1 50	9	.....	.....	.....	.....	.....	.....
Drivers	24	1 87½	9½	2	1 50	9	12	1 75	10
Drivers	15	1 87	9	1	1 25	9	2	1 65	10
Dumpers.....	2	1 75	9½	4	1 50	9	.....	.....	.....
Engineers.....	2	2 00	9½	2	2 50	9	2	2 00	9
Firemen	2	2 00	9½	.....	.....	.....	.....	.....	.....
Furnaceman	1	1 50	10	.....	.....	.....	.....	.....	.....
Hoppermen	4	1 75	10	.....	.....	.....	.....	.....	.....
Laborers	27	1 00	10	18	75	10	3	1 75	9
Laborers.....	6	1 50	9	8	1 75	9	3	1 25	9½
Mine bosses.....	2	3 00	9	.....	.....	.....	.....	.....	.....
Machine men.....	28	2 25	9	.....	.....	.....	.....	.....	.....
Miners	12	1 37	9	100	*1	9½	31	*2	9
Miners	25	*3	9	356	2 00	9	215	1 75	10
Miners	50	*4	.....	443	1 87	9½	132	*5	10
Miners.....	26	1 65	10	22	*6	10	.....	.....	.....
Pipeman.....	1	2 00	9	.....	.....	.....	.....	.....	.....
Roadmen.....	43	1 87½	9½	12	2 00	10	11	1 73	10
Roadmen	11	1 75	9	.....	.....	.....	.....	.....	.....
Stable boss.....	1	1 25	9	.....	.....	.....	.....	.....	.....
Slack haulers	1	75	10	4	*7	10	1	50	10
Track layers	1	1 75	10	6	1 85	10	.....	.....	.....
Trappers.....	3	50	10	.....	.....	.....	.....	.....	.....
Trimmers.....	5	1 75	10	1	1 50	10	3	1 75	9½
Trimmers.....	1	1 50	9	.....	.....	.....	.....	.....	.....
Water bailer.....	1	1 00	10	.....	.....	.....	.....	.....	.....
Weighmasters	1	2 00	9	1	1 55	10	1	1 75	10

Total number of men employed, 2,398.

*1 and *2—65 cents per ton. *3—40 cents per ton. *4—62 cents per ton. *5—65 cents per ton.
*6—80 cents per ton. *7—4½ cents per ton.

TABLE SHOWING THE AMOUNT OF WAGES PAID, ETC.—Continued.

Belmont County.

Occupation.	No. of men employed.	Wages per day.	Hours of labor daily.	No. of men employed.	Wages per day.	Hours of labor daily.	No. of men employed.	Wages per day.	Hours of labor daily.
Dumper.....	1	\$1 25	10	.....	.....	.....	.....	.....	.....
Drivers.....	4	1 67	8½	2	\$1 66	9½	5	\$1 37½	10
Drivers.....	3	1 50	10	48	1 80	10	.....	.....	.....
Laborers.....	25	1 69	10	5	1 50	10	10	2 00	10
Miners.....	121	1 37	11	28	2 60	8	40	2 00	8
Miners.....	24	4 84	9	135	1 50	10	122	1 75	10
Miners.....	570	2 00	10	83	2 00	9	24	2 25	10
Roadmen.....	20	1 80	10	9	1 75	10	1	1 66	9
Trappers.....	7	1 50	10	10	1 55	10	1	1 65	10
Trackmen.....	3	1 50	10	.....	.....	.....	.....	.....	.....
Weigh boss.....	1	2 00	10	.....	.....	.....	.....	.....	.....
Weighmen.....	2	1 50	10	1	1 66	9	.....	.....	.....

Total number of men employed, 1,305.

Columbiana County.

Blacksmiths.....	4	2 00	9½	.....	.....	.....	.....	.....	.....
Coke drawers.....	7	*1	9	4	*2	9	8	*3	9
Drivers.....	4	1 70	10	9	1 70	9	42	1 65	10
Drivers.....	17	1 84	9½	4	1 50	10	.....	.....	.....
Dumpers.....	10	1 35	10	.....	.....	.....	.....	.....	.....
Engineers.....	5	1 85	12	1	2 00	10	.....	.....	.....
Firemen.....	2	1 50	10	.....	.....	.....	.....	.....	.....
Laborers.....	7	1 55	9	3	1 60	10	15	1 25	9½
Laborers.....	4	*4	10	.....	.....	.....	.....	.....	.....
Loaders.....	4	2 00	9	.....	.....	.....	.....	.....	.....
Miners.....	250	1 50	10	104	*6	9½	213	*6	10
Miners.....	160	1 55	10	91	*7	10	57	2 00	10
Roadmen.....	2	1 90	10	3	1 70	9	.....	1 80	10
Roadmen.....	10	1 85	10	9	2 07	9½	2	1 50	10
Triplemen.....	5	1 50	10	.....	.....	.....	.....	.....	.....

Total number of men employed, 1,057.

*1—11 cents per ton. *2—16 cents per ton. *3—44 cents per oven. *4—Piece work. *5—68 cents per ton. *6—83 cents per ton. *7—65 cents per ton.

Coshocton County.

Blacksmith.....	1	1 75	9	.....	.....	.....	.....	.....	.....
Drivers.....	3	1 65	9	3	1 75	9	5	1 50	9
Laborers.....	2	1 70	9	.....	.....	.....	.....	.....	.....
Mine bosses.....	1	2 25	9	2	2 00	9	.....	.....	.....
Miners.....	16	1 75	8	65	1 75	9	19	*	9
Miners.....	100	1 50	9	.....	.....	.....	.....	.....	.....
Roadmen.....	1	1 65	9	2	1 75	9	1	1 50	9
Trimmers.....	2	1 25	9	.....	.....	.....	.....	.....	.....
Weighmen.....	1	1 75	9	3	1 50	9	.....	.....	.....

Total number of men employed, 227.

* 75 cents per ton.

Carroll County.

Ballers.....	2	1 51	9	.....	.....	.....	.....	.....	.....
Blacksmiths.....	1	2 00	10	.....	.....	.....	.....	.....	.....
Coal trimmers.....	3	1 28	9	.....	.....	.....	.....	.....	.....
Drivers.....	3	2 00	10	20	1 51	9	.....	.....	.....
Door boys.....	5	54	9	.....	.....	.....	.....	.....	.....
Dumper.....	1	1 28	9	.....	.....	.....	.....	.....	.....
Furnaceman.....	1	1 28	9	.....	.....	.....	.....	.....	.....

TABLE SHOWING THE AMOUNT OF WAGES PAID, ETC.—Continued.

Carroll County—Concluded.

Occupation.	No. of men employed.	Wages per day.	Hours of labor daily.	No. of men employed.	Wages per day.	Hours of labor daily.	No. of men employed.	Wages per day.	Hours of labor daily.
Firemen	1	\$1 90	9						
Machine cutters.....	12	2 17	9						
Miners	278	*1	9	44	2 00	10	48	2 50	8
Miners	135	1 87½	9						
Machinist.....	1	2 10	9						
Machinist helper.....	1	1 51	9						
Oiler	1	81	9						
Roadmen	7	2 00	10	2	1 62	9			
Sable boss.....	1	1 28	9						
Shooters	50	*2	9						
Trappers	2	2 00	10						
Weigh bo s	1	2 00	9						
Total number of men employed, 620.									

*1—65 cents per ton. *2—30¼ cents per ton.

Guernsey County.

Blacksmiths	3	1 75	10	1	2 00	10			
Bank boss.....	1	2 00	10						
Book-keeper	1	1 66	10						
Dumpers.....	11	1 37	10	1	1 35	10			
Drivers.....	16	1 62	10	13	1 75	10	7	1 50	10
Engineers.....	2	2 00	10						
Loaders.....	5	1 37	10						
Laborers	100	1 70	10	7	2 00	10			
Miners	275	1 75	10	160	1 80	10	249	*	10
Mining boss.....	1	1 66⅔	10						
Roadmen	27	1 75	10	13	1 50	10			
Slack haulers.....	11	1 37	10	1	1 00	10			
Trimmer.....	1	1 35	10						
Trappers	13	1 16	10						
Weigh boss	2	1 62	10	2	1 50	10			
Water pumpers.....	2	2 00	10						
Total number of men employed, 925.									

* 65 cents per ton.

Gallia County.

Drivers.....	4	1 20	9						
Laborers	3	1 30	9						
Mine boss.....	1	1 30	9						
Miners	50	*	10						
Roadmen	2	1 30	9						
Total number of men employed, 60.									

* 50 cents per ton.

Holmes County.

Blacksmith.....	1	1 65	10						
Drivers.....	2	1 50	10						
Laborers	5	1 50	10						
Mineis	29	*	10						
Total number of men employed, 37.									

* 90 cents per ton.

TABLE SHOWING THE AMOUNT OF WAGES PAID, ETC.—Continued.

Hocking County.

Occupation.	No. of men employed.	Wages per day.	Hours of labor daily.	No. of men employed.	Wages per day.	Hours of labor daily.	No. of men employed.	Wages per day.	Hours of labor daily.
Blacksmiths	1	\$1 65	10	1	1 75	9	1	2 00	9
Blacksmiths	1	2 50	9						
Book-keeper	1	3 00	10						
Bit carriers	4	1 00	9						
Carpenter	1	2 00	9						
Dumpers	2	1 75	10						
Drillers	7	2 50	9						
Drivers	18	1 45	10	27	1 75	10	20	1 89	9
Engineers	3	2 50	10						
Firemen	2	2 00	10	2	1 75	9½			
Forman	1	2 00	10						
Greaser	1	1 25	9						
Helper	1	1 75	9						
Hostler	1	1 87	9						
Laborers	14	1 45	10	2	1 50	9	5	1 75	9
Loaders	93	2 60	9						
Machine men	11	3 00	9	28	2 50	10			
Machine helpers	28	2 00	9	11	2 33	9			
Miners	258	*1	8	320	*2	9	273	1 42½	9
Miners	370	*3	10						
Pipeman	1	2 12½	9						
Roadmen	22	1 45	10	1	2 00	9	3	2 50	10
Roadmen	1	1 75	10						
Superintendent	1	3 00	10						
Slack hauler	1	1 25	10						
Stable boss	1	2 00	9						
Trackman	1	2 12½	9						
Trainman	1	2 00	9						
Trimmers	41	1 75	10						
Trappers	1	3 00	10	3	50	9	5	75	10
Weighmen	6	1 55	10	1	2 00	9	1	2 00	9
Weighman	1	1 75	9						

Total number of men employed, 1,600.

*1—60 cents per ton. *2—65 cents per ton. *3—32½ cents per ton.

Harrison County.

Drivers	10	1 25	9						
Dumpers	2	1 35	9						
Miners	56	1 50	9						
Roadmen	10	1 35	9						

Total number of men employed, 78.

Jackson County.

Blacksmiths	1	1 70	9	1	1 82	9	1	1 75	9
Blacksmiths	1	1 70	9½						
Cagers	1	1 50	9	2	1 42½	10			
Dumpers	11	1 30	9	1	1 42	9			
Drivers	2	1 39	10	50	1 35	9	16	1 42	9
Drivers	3	1 42	10						
Engineer	1	1 50	9						
Greaser	1	1 00	9						
Jin hands	2	1 42	9						
Laborers	16	1 25	9	20	1 35	9	8	1 42½	8
Miners	134	1 35	10	1,179	*1	9	116	2 50	9
Miners	141	*2	9	175	*3	9	30	1 42½	8
Miners	156	*4	9	143	*5	10	30	1 25	9
Mine boss	1	2 00	9						
Pumper	1	1 15	10						
Pushers	3	1 42½	9	7	1 42½	10			

*1—65 cents per ton. *2—75 cents per ton. *3—60 cents per ton. *4 and *5—70 cents per ton.

TABLE SHOWING THE AMOUNT OF WAGES, ETC.—Continued.

Jackson County—Concluded.

Occupation.	No. of men employed.	Wages per day.	Hours of labor daily.	No. of men employed.	Wages per day.	Hours of labor daily.	No. of men employed.	Wages per day.	Hours of labor daily.
Roadmen	21	\$1 42	9	20	\$1 65	9	1	\$1 75	9
Roadmen	2	1 62	9	1	1 60	10			
Stableman	1	1 25	9						
Trimmers.....	12	1 25	9	1	1 35	9	1	1 47½	9
Trimmer	1	1 42½	9						
Trappers	2	60	9	2	55	9	2	45	10
Track layers.....	11	1 42½	9	1	1 60	9	1	1 65	9
Weighmaster.....	1	1 42½	9	2	1 42½	8	1	1 65	9
Water hauler	1	1 50	9						
Water bailer	1	1 50	9						

Total number of men employed, 2,340.

Jefferson County.

Blacksmiths	1	2 00	10	1	1 50	9			
Checkman	1	1 25	10						
Drivers.....	4	1 75	10	1	1 50	8	2	1 40	9
Drivers.....	3	1 33⅓	10	5	1 65	10			
Laborers	13	1 35	9	5	1 75	10			
Miners	10	2 50	8	13	2 00	8	133	*1	8
Miners	96	*2	10	53	*3	10	175	1 50	9
Miners	40	2 00	10						
Roadmen	6	1 50	8	1	1 40	9	2	2 00	10
Roadmen	2	1 60	10						
Tylemen.....	1	1 65	10	2	1 50	10			
Tracklayer.....	1	1 50	10						
Weighman	1	1 45	10						

Total number of men employed, 572.

*1 75 cents per ton. *2 55 cents per ton. *3 60 cents per ton.

Lawrence County.

Blacksmiths	1	1 65	10	1	1 75	9			
Drivers	4	1 00	10	20	1 75	10	5	1 25	10
Laborers	3	1 30	10	1	1 25	10			
Machinists	6	3 25	10						
Miners	88	*1	9	166	1 25	9	160	*2	10
Roadmen	6	1 00	10						
Stable tender	1	65	10						
Trackman	1	1 45	10						
Weighman	1	2 00	9	1	1 75	9			

Total number of men employed, 465.

*1 65 cents per ton. *2 65 cents per ton.

Medina County.

Blacksmiths	2	1 92	9	2	2 00	9			
Drivers	27	1 92	9						
Engineers.....	2	1 92	9	6	1 75	12			
Laborers.....	6	1 40	9						
Miners	160	*	8	211	1 92	9	349	1 75	9
Roadmen	16	1 92	9						
Topmen	6	1 50	9						
Trappers.....	4	55	9						

Total number of men employed, 791.

* 80 cents per ton.

TABLE SHOWING THE AMOUNT OF WAGES, ETC.—Continued.

Meigs County.

Occupation.	No. of men employed.	Wages per day.	Hours of labor daily.	No. of men employed.	Wages per day.	Hours of labor daily.	No. of men employed.	Wages per day.	Hours of labor daily.
Bank bosses.....	1	\$2 25	10	1	\$2 00	10	.....	.....	.....
Drivers	14	1 50	10	14	1 90	9	25	\$1 40	10
Drivers.....	22	1 25	10	.....	.....	.....	.....	.....	.....
Foreman.....	1	2 00	10	.....	.....	.....	.....	.....	.....
Laborers	32	1 40	10	10	1 90	9	10	1 25	10
Laborers	5	1 15	10	.....	.....	.....	.....	.....	.....
Miners	104	*	10	49	1 50	10	10	1 90	9
Miners	50	2 00	10	20	1 50	8	17	1 35	10
Miners	75	1 75	9	41	1 00	10	28	1 40	8
Miners	75	1 75	10	.....	.....	.....	.....	.....	.....
Roadmen	2	1 60	10	3	1 75	10	.....	.....	.....
Trackmen.....	4	1 90	9	.....	.....	.....	.....	.....	.....
Total number of men employed, 613.									

* 56¼ cents per ton.

Muskingum County.

Drivers.....	26	1 55	8	.....	.....	.....	.....	.....	.....
Mine bosses.....	11	2 00	8	.....	.....	.....	.....	.....	.....
Miners	9	1 50	9	195	2 00	8	115	1 50	8
Miners	125	1 75	8	.....	.....	.....	.....	.....	.....
Roadmen	13	1 50	8	.....	.....	.....	.....	.....	.....
Weigh bosses	6	1 50	8	.....	.....	.....	.....	.....	.....
Total number of men employed, 500.									

Mahoning County.

Drivers.....	26	1 87	9	.....	.....	.....	.....	.....	.....
Engineers.....	6	1 75	12	.....	.....	.....	.....	.....	.....
Laborers	48	1 30	9	.....	.....	.....	.....	.....	.....
Miners	634	1 87	9	.....	.....	.....	.....	.....	.....
Roadmen	26	1 87	9	.....	.....	.....	.....	.....	.....
Total number of men employed, 740.									

Morgan County.

Drivers.....	2	1 50	9	.....	.....	.....	.....	.....	.....
Miners	30	1 75	9	.....	.....	.....	.....	.....	.....
Roadmen	3	1 50	9	.....	.....	.....	.....	.....	.....
Total number of men employed, 35.									

Noble County.

Drivers.....	2	1 35	9	.....	.....	.....	.....	.....	.....
Miners	7	1 60	9	.....	.....	.....	.....	.....	.....
Roadmen	3	1 50	9	.....	.....	.....	.....	.....	.....
Total number of men employed, 12.									

Perry County.

Blacksmiths	13	2 00	9	.....	.....	.....	.....	.....	.....
Bank boss.....	1	2 00	10	.....	.....	.....	.....	.....	.....
Cagers	12	1 75	9	.....	.....	.....	.....	.....	.....
Dumpers.....	11	1 75	10	13	1 65	9	.....	.....	.....
Drivers.....	20	1 87½	9½	9	1 50	9	12	1 75	9
Drivers.....	12	1 50	8	1	2 12	9	2	1 65	9
Drivers.....	11	1 40	9	2	1 00	9	3	1 75	10

TABLE SHOWING THE AMOUNT OF WAGES, ETC.—Continued.
Perry County—Concluded.

Occupation.	No. of men employed.	Wages per day.	Hours of labor daily.	No. of men employed.	Wages per day.	Hours of labor daily.	No. of men employed.	Wages per day.	Hours of labor daily.
Drivers.....	12	\$1 25	9						
Engineers.....	11	1 75	9	1	\$2 25	9	1	\$1 65	9
Firemen.....	14	1 50	9						
Laboreis.....	41	1 50	9	38	2 00	9½	25	1 75	10
Laboreis.....	22	1 25	9						
Miners.....	558	1 65	9	530	1 70	9	325	2 25	9
Miners.....	48	2 62	8½	212	1 75	10	135	*1	9½
Miners.....	350	1 75	9	180	*2	9	333	1 75	9
Miners.....	455	*3	10	47	*4	10	17	*5	8
Pumpers.....	12	1 50	9						
Roadmen.....	24	2 20	9½	15	1 75	8	22	1 50	9
Roadmen.....	1	1 50	8						
Stable boss.....	1	1 33⅓	10						
Trimmers.....	11	1 55	9	2	2 00	10	5	1 50	10
Trimmers.....	6	1 75	10						
Track layers.....	2	2 25	9						
Trappers.....	6	65	9						
Weighmen.....	11	1 50	9	1	2 00	10			
Weigh boss.....	1	1 66⅔	9						

Total number of men employed, 3,600.

*1—60 cents per ton. *2—30 cents per ton. *3—65 cents per ton. *4—75 cents per ton. *5—65 cents per ton.

Portage County.

Blacksmiths.....	2	\$1 75	9						
Drivers.....	8	1 75	9						
Dumper.....	1	1 50	9						
Engineer.....	1	1 75	12	1	\$1 25	9			
Furnace boy.....	1	50	9						
Mine boss.....	1	1 50	9						
Miners.....	98	1 50	9	124...	1 75	9			
Roadmen.....	4	1 75	9						
Top hands.....	3	1 50	9						
Weigh bosses.....	2	1 75	9						

Total number of men employed, 246.

Stark County.

Car greasers.....	2	\$1 00	9						
Dumper.....	1	1 40	9						
Drivers.....	16	1 87	9	13	\$1 90	9	11	\$1 60	9
Drivers.....	15	1 62	10	1	1 75	9			
Engineers.....	1	1 50	9	2	1 90	12	2	1 87	9
Laborers.....	50	1 60	10	30	1 75	8	4	1 50	9
Miners.....	1,100	1 60	10	175	1 75	9	175	1 87	10
Miners.....	40	*1	10	10	*2	10	179	1 87	9
Pit boss.....	1	1 75	10						
Roadmen.....	11	2 00	9	5	1 75	10	2	1 90	9
Trappers.....	2	50	10	3	55	9			
Top hands.....	12	1 87	9						
Weighmen.....	12	1 62	10	1	2 15	9			

Total number of men employed, 1,876.

Summit County.

Drivers.....	10	\$1 25	9						
Dumpers.....	4	1 35	9						
Laborers.....	16	1 25	9						
Miners.....	350	1 50	9						
Roadmen.....	10	1 35	9						
Trackmen.....	3	1 50	9						

Total number of men employed, 393.

*1—70 cents per ton. *2—80 cents per ton.

TABLE SHOWING THE AMOUNT OF WAGES, ETC.—Continued.

Tuscarawas County.

Occupation.	No. of men employed.	Wages per day.	Hours of labor daily.	No. of men employed.	Wages per day.	Hours of labor daily.	No. of men employed.	Wages per day.	Hours of labor daily.
Blacksmiths	1	\$1 60	8	.....	.....	.....	.....	.....	.....
Carpenters	25	1 62	9	.....	.....	.....	.....	.....	.....
Cager	1	1 50	9	.....	.....	.....	.....	.....	.....
Clay diggers	8	60	10	.....	.....	.....	.....	.....	.....
Drivers.....	26	1 62	9	5	\$1 50	10	4	\$1 25	10
Day hands	8	1 75	10	.....	.....	.....	.....	.....	.....
Engineer.....	1	1 50	9	.....	.....	.....	.....	.....	.....
Greaser	1	1 00	8	.....	.....	.....	.....	.....	.....
Miners	120	1 40	9	145	*1	9	124	2 00	10
Miners	142	1 60	9	151	*2	8	148	*3	10
Miners	110	1 50	10	.....	.....	.....	.....	.....	.....
Mine boss.....	1	2 00	10	.....	.....	.....	.....	.....	.....
Pumpers	2	1 37	8	.....	.....	.....	.....	.....	.....
Roadmen	11	1 92	9	11	1 50	10	13	1 62	8
Tripple hands	3	1 62	10	1	1 50	8	.....	.....	.....
Trappers	2	50	8	.....	.....	.....	.....	.....	.....
Turners.....	2	1 50	9	.....	.....	.....	.....	.....	.....
Weighmen	11	1 50	8	.....	.....	.....	.....	.....	.....
Weighmaster	1	1 60	10	.....	.....	.....	.....	.....	.....

Total number of men employed, 1,078.

*1—50 cents per ton. *2—*3—65 cents per ton.

Trumbull County.

Blacksmiths	12	\$2 50	9	1	\$1 80	9	1	\$1 80	9
Dumpers	12	1 75	9	.....	.....	.....	.....	.....	.....
Drivers.....	17	2 25	9	12	1 75	9	13	1 80	9
Engineers	6	2 75	9	1	1 85	9	.....	.....	.....
Entry men.....	4	2 00	9	.....	.....	.....	.....	.....	.....
Laborers	49	1 40	9	10	1 25	9	11	75	9
Street laborers	4	1 35	9	.....	.....	.....	.....	.....	.....
Lumper	1	1 75	9	.....	.....	.....	.....	.....	.....
Miners	170	2 25	9	160	1 75	9	77	*2	9
Pumpers	2	2 00	9	.....	.....	.....	.....	.....	.....
Pit boss	1	2 60	9	.....	.....	.....	.....	.....	.....
Roadmen	14	2 25	9	32	1 75	9	3	1 85	9
Trappers	3	75	9	.....	.....	.....	.....	.....	.....
Weighmen	12	1 75	10	1	1 25	9	.....	.....	.....

Total number of men employed, 629.

Vinton County.

Blacksmith	1	\$1 75	9	.....	.....	.....	.....	.....	.....
Cager	1	1 30	9	.....	.....	.....	.....	.....	.....
Driver	1	1 50	8	13	\$1 30	9	1	\$1 25	10
Engineer.....	1	1 75	12	.....	.....	.....	.....	.....	.....
Laborers	13	1 50	8	1	1 00	9	.....	.....	.....
Miners	18	1 25	8	138	*3	9	.....	.....	.....
Pushers	3	1 30	9	.....	.....	.....	.....	.....	.....
Roadmen	4	1 60	9	.....	.....	.....	.....	.....	.....
Trimmer	1	1 25	9	.....	.....	.....	.....	.....	.....
Water haulers.....	3	1 30	11	.....	.....	.....	.....	.....	.....
Weighmaster	1	1 50	9	.....	.....	.....	.....	.....	.....

Total number of men employed, 200.

*1—80 cents per ton. *2—85 cents per ton. *3—70 cents per ton.

TABLE SHOWING THE AMOUNT OF WAGES, ETC.—Concluded.

Washington County.

Occupation.	No. of men employed.	Wages per day.	Hours of labor daily.	No. of men employed.	Wages per day.	Hours of labor daily.	No. of men employed.	Wages per day.	Hours of labor daily.
Drivers.....	2	\$1 25	9	.....	.....	.....	.....	.....	.....
Miners.....	6	1 50	9	.....	.....	.....	.....	.....	.....
Roadmen.....	1	1 35	9	.....	.....	.....	.....	.....	.....

Total number of men employed, 9.

Wayne County.

Blacksmiths.....	12	1 87	9	.....	.....	.....	.....	.....	.....
Drivers.....	16	1 87	9	.....	.....	.....	.....	.....	.....
Laborers.....	70	1 50	9	.....	.....	.....	.....	.....	.....
Mine's.....	200	*	9	.....	.....	.....	.....	.....	.....
Roadmen.....	34	1 87	9	.....	.....	.....	.....	.....	.....

Total number of men employed, 332.

NECESSARIES OF LIFE.

COST OF LIVING IN 48 TOWNS.

Ashtabula.

Name of article.	Per—	Price.	Name of article.	Per—	Price.
Flour, wheat.....	Barrel.....	\$4 80	Starch.....	Pound.....	\$0 8
Flour, rye.....	Pound.....	1½	Milk.....	Quart.....	5
Cornmeal.....	Pound.....	2	Beef, roa-t.....	Pound.....	10
Codfish.....	Pound.....	8	Beef, steak.....	Pound.....	12
Rice.....	Pound.....	6	Pork, fresh.....	Pound.....	8
Beans.....	Quart.....	10	Pork, salted.....	Pound.....	9
Tea, black.....	Pound.....	40	Ham, smoked.....	Pound.....	12
Tea, green.....	Pound.....	35	Lard.....	Pound.....	9
Tea, Japan.....	Pound.....	35	Mutton.....	Pound.....	12
Coffee, green.....	Pound.....	23	Veal.....	Pound.....	12
Coffee, roasted.....	Pound.....	26	Coal, soft.....	Ton.....	3 75
Cheese.....	Pound.....	14	Coal, hard.....	Ton.....	7 00
Butter.....	Pound.....	26	Calico, print.....	Yard.....	9
Eggs.....	Dozen.....	22	Sheeting, unbleached..	Yard.....	16
Potatoes.....	Bushel.....	1 00	Sheeting, bleached..	Yard.....	17
Sugar, brown.....	Pound.....	5½	Mustin, bleached.....	Yard.....	9
Sugar, coffee.....	Pound.....	6½	Muslin, unbleached.....	Yard.....	7½
Sugar, granulated.....	Pound.....	7	Shirting, unbleached ..	Yard.....	8
Molasses.....	Gallon.....	50	Shirting, bleached.....	Yard.....	9
Syrup.....	Gallon.....	40	Flannel.....	Yard.....	50
Soap, common.....	Bar.....	5	Woollen dress goods..	Yard.....	80

NECESSARIES OF LIFE—Continued.

Atwater.

Name of article.	Per—	Price.	Name of article.	Per—	Price.
Flour, wheat.....	Barrel	\$4 50	Starch.....	Pound.....	\$0 10
Flour, rye.....	Pound.....	2 ¹ / ₄	Milk.....	Quart	5
Cornmeal	Pound.....	2	Beef, roast.....	Pound.....	12 ¹ / ₂
Codfish	Pound.....	9	Beef, steak.....	Pound.....	12 ¹ / ₂
Rice	Pound.....	7	Pork, fresh.....	Pound.....	12 ¹ / ₂
Beans	Quart	8	Pork, salted	Pound.....	9
Tea, black.....	Pound.....	60	Ham, smoked	Pound.....	12 ¹ / ₂
Tea, green	Pound.....	50	Lard	Pound.....	9
Tea, Japan.....	Pound	50	Mutton.....	Pound.....	12 ¹ / ₂
Coffee, green..	Pound.....	22	Veal.....	Pound.....	10
Coffee, roasted	Pound.....	26	Coal, soft.....	Ton	2 75
Cheese	Pound.....	12 ¹ / ₂	Coal, hard.....	Ton	7 00
Butter	Pound.....	20	Calico, print..	Yard	6
Eggs	Dozen	18	Sheeting, unbleached..	Yard	7
Potatoes	Bushel	70	Sheeting, bleached.....	Yard	8
Sugar, brown.....	Pound.....	6	Muslin, bleached.....	Yard	7
Sugar, coffee	Pound.....	6 ¹ / ₂	Muslin, unbleached.....	Yard	8
Sugar, granulated.....	Pound.....	7	Shirting, unbleached ..	Yard	10
Molasses	Gallon	50	Shirting, bleached..	Yard	12
Syrup	Gallon	60	Flannel	Yard	30
Soap, common.....	Bar.....	5	Woolen dress goods	Yard	45

Akron.

Flour, wheat.....	Barrel	4 50	Starch.....	Pound.....	10
Flour, rye.....	Pound.....	3	Milk	Quart	6
Cornmeal	Pound.....	2 ¹ / ₂	Beef, roast.....	Pound.....	10
Codfish	Pound.....	10	Beef, steak	Pound.....	12 ¹ / ₂
Rice	Pound.....	10	Pork, fresh	Pound.....	11
Beans	Quart	10	Pork, salted	Pound.....	8
Tea, black.....	Pound.....	50	Ham, smoked.....	Pound.....	12 ¹ / ₂
Tea, green.....	Pound.....	50	Lard	Pound.....	9
Tea, Japan.....	Pound.....	50	Mutton.....	Pound.....	13
Coffee, green.....	Pound.....	25	Veal.....	Pound.....	10
Coffee, roasted.....	Pound.....	28	Coal, soft..	Ton	3 00
Cheese	Pound.....	18	Coal, hard.....	Ton	6 50
Butter	Pound.....	30	Calico, print.....	Yard	6
Eggs	Dozen	22	Sheeting, unbleached..	Yard	14
Potatoes	Bushel	1 00	Sheeting, bleached.....	Yard	12
Sugar, brown.....	Pound.....	6	Muslin, bleached	Yard	8
Sugar, coffee.....	Pound	7	Muslin, unbleached	Yard	8
Sugar, granulated.....	Pound	7	Shirting, unbleached ..	Yard	10
Molasses	Gallon.....	60	Shirting, bleached	Yard	10
Syrup	Gallon.....	60	Flannel	Yard	30
Soap, common.....	Bar.....	5	Woolen dress goods.....	Yard	35

Bellefontaine.

Flour, wheat.....	Barrel	4 60	Starch.....	Pound.....	9
Flour, rye	Pound.....	2 ¹ / ₄	Milk.....	Quart	6
Cornmeal	Pound.....	1 ¹ / ₂	Beef, roast.....	Pound.....	10
Codfish	Pound.....	11	Beef, steak	Pound.....	12 ¹ / ₂
Rice	Pound.....	10	Pork, fresh	Pound.....	12
Beans	Quart	8	Pork, salted	Pound.....	12
Tea, black	Pound.....	60	Ham, smoked.....	Pound.....	14
Tea, green.....	Pound.....	50	Lard	Pound.....	10
Tea, Japan.....	Pound.....	75	Mutton.....	Pound.....	11
Coffee, green.....	Pound.....	24	Veal.....	Pound.....	13
Coffee, roasted	Pound.....	28	Coal, soft.....	Ton	3 75
Cheese	Pound.....	13	Coal, hard.....	Ton	6 75
Butter.....	Pound	25	Calico, print	Yard	6
Eggs	Dozen	22	Sheeting, unbleached..	Yard	15
Potatoes	Bushel	1 10	Sheeting, bleached.....	Yard	15
Sugar, brown	Pound.....	6	Muslin, bleached.....	Yard	6
Sugar, coffee	Pound.....	7 ¹ / ₂	Muslin, unbleached.....	Yard	7
Sugar, granulated.....	Pound.....	8 ¹ / ₂	Shirting, unbleached ..	Yard	10
Molasses	Gallon.....	60	Shirting, bleached.....	Yard	12 ¹ / ₂
Syrup	Gallon	50	Flannel	Yard	40
Soap, common.....	Bar.....	5	Woolen dress goods.....	Yard	50

NECESSARIES OF LIFE—Continued.

Barnesville.

Name of article.	Per—	Price.	Name of article.	Per—	Price.
Flour, wheat.....	Barrel	\$4 30	Starch	Pound.....	\$0 10
Flour, rye.....	Pound	3	Milk.....	Quart	6
Cornmeal	Pound	2	Beef, roast.....	Pound	10
Codfish	Pound	10	Beef, steak.....	Pound	12½
Rice.....	Pound	8	Pork, fresh.....	Pound	10
Beans	Quart	10	Pork, salted.....	Pound	10
Tea, black.....	Pound	60	Ham, smoked.....	Pound	15
Tea, green.....	Pound	90	Lard	Pound	10
Tea, Japan.....	Pound	75	Mutton.....	Pound	10
Coffee, green.....	Pound	25	Veal	Pound	10
Coffee, roasted.....	Pound	27	Coal, soft.....	Ton	1 50
Cheese	Pound	16	Coal, hard.....	Ton .....	.....
Butter	Pound	20	Calico, print	Yard	5
Eggs	Dozen	20	Sheeting, unbleached..	Yard	20
Potatoes	Bushel	90	Sheeting, bleached.....	Yard	25
Sugar, brown	Pound	7	Muslin, bleached.....	Yard	8
Sugar, coffee.....	Pound	8	Muslin, unbleached.....	Yard	6
Sugar, granulated.....	Pound	8	Shirting, unbleached..	Yard	10
Molasses	Gallon	70	Shirting, bleached.....	Yard	12
Syrup	Gallon	50	Flannel	Yard	35
Soap, common.....	Bar.....	5	Woolen dress goods.....	Yard	50

Cincinnati.

Flour, wheat.....	Barrel	5 00	Starch	Pound.....	5
Flour, rye.....	Pound.....	3	Milk.....	Quart	6
Cornmeal	Pound.....	7	Beef, roast.....	Pound.....	12½
Codfish	Pound.....	8	Beef, steak.....	Pound.....	12½
Rice.....	Pound.....	10	Pork, fresh.....	Pound.....	8
Beans	Quart	10	Pork, salted.....	Pound.....	10
Tea, black.....	Pound	60	Ham, smoked.....	Pound.....	11
Tea, green.....	Pound	60	Lard	Pound.....	9
Tea, Japan.....	Pound	60	Mutton.....	Pound.....	10
Coffee, green.....	Pound	24	Veal	Pound.....	1 00
Coffee, roasted.....	Pound	28	Coal, soft.....	Ton .....	.....
Cheese	Pound	18	Coal, hard.....	Ton .....	.....
Butter	Pound	23	Calico, print.....	Yard	5
Eggs	Dozen	25	Sheeting, unbleached..	Yard	20
Potatoes	Bushel	1 00	Sheeting, bleached.....	Yard	22
Sugar, brown.....	Pound.....	6	Muslin, bleached.....	Yard	8½
Sugar, coffee.....	Pound.....	7	Muslin, unbleached.....	Yard	7
Sugar, granulated.....	Pound.....	7½	Shirting, unbleached..	Yard	10
Molasses	Gallon.....	60	Shirting, bleached.....	Yard	15
Syrup	Gallon	60	Flannel	Yard	35
Soap, common.....	Bar.....	5	Woolen dress goods.....	Yard	50

Canal Dover.

Flour, wheat.....	Barrel	4 60	Starch	Pound	8
Flour, rye	Pound.....	2	Milk.....	Quart.....	5
Cornmeal	Pound.....	2	Beef, roasted.....	Pound.....	10
Codfish	Pound.....	10	Beef, steak.....	Pound.....	12
Rice.....	Pound.....	8	Pork, fresh.....	Pound.....	8
Beans	Quart	12	Pork, salted.....	Pound.....	10
Tea, black.....	Pound.....	60	Ham, smoked.....	Pound.....	12
Tea, green.....	Pound.....	60	Lard	Pound.....	10
Tea, Japan.....	Pound.....	60	Mutton.....	Pound.....	8
Coffee, green.....	Pound.....	25	Veal	Pound.....	10
Coffee, roasted.....	Pound.....	28	Coal, soft.....	Ton	1 75
Cheese	Pound.....	15	Coal, hard.....	Ton .....	.....
Butter	Pound.....	24	Calico, print.....	Yard	6
Eggs	Dozen	24	Sheeting, unbleached..	Yard	8
Potatoes	Bushel	1 00	Sheeting, bleached.....	Yard	10
Sugar, brown.....	Pound.....	6	Muslin, bleached.....	Yard	10
Sugar, coffee.....	Pound.....	8	Muslin, unbleached.....	Yard	8
Sugar, granulated.....	Pound.....	8	Shirting, unbleached..	Yard	25
Molasses	Gallon.....	80	Shirting, bleached.....	Yard	30
Syrup	Gallon	50	Flannel	Yard	40
Soap, common.....	Bar.....	5	Woolen dress goods.....	Yard	50

NECESSARIES OF LIFE—Continued.

Canton.

Name of article.	Per—	Price.	Name of article.	Per—	Price
Flour, wheat.....	Barrel.....	\$4 40	Starch.....	Pound.....	\$0 5
Flour, rye.....	Pound.....	3½	Milk.....	Quart.....	6
Cornmeal.....	Pound.....	2	Beef, roast.....	Pound.....	9
Codfish.....	Pound.....	10	Beef, steak.....	Pound.....	12½
Rice.....	Pound.....	8	Pork, fresh.....	Pound.....	8
Beans.....	Quart.....	8	Pork, salted.....	Pound.....	8
Tea, black.....	Pound.....	65	Ham, smoked.....	Pound.....	12½
Tea, green.....	Pound.....	60	Lard.....	Pound.....	9
Tea, Japan.....	Pound.....	70	Mutton.....	Pound.....	7
Coffee, green.....	Pound.....	15	Veal.....	Pound.....	10
Coffee, roasted.....	Pound.....	18	Coal, soft.....	Ton.....	2 25
Cheese.....	Pound.....	16	Coal, hard.....	Ton.....	7 50
Butter.....	Pound.....	22	Calico, print.....	Yard.....	7
Eggs.....	Dozen.....	22	Sheeting, unbleached..	Yard.....	15
Potatoes.....	Bushel.....	1 00	Sheeting, bleached.....	Yard.....	18
Sugar, brown.....	Pound.....	5	Muslin, bleached.....	Yard.....	10
Sugar, coffee.....	Pound.....	7	Muslin, unbleached....	Yard.....	8
Sugar, granulated.....	Pound.....	7½	Shirting, unbleached..	Yard.....	9
Molasses.....	Gallon.....	50	Shirting, bleached.....	Yard.....	15
Syrup.....	Gallon.....	60	Flannel.....	Yard.....	45
Soap, common.....	Bar.....	5	Woolen dress goods....	Yard.....	80

Cleveland.

Flour, wheat.....	Barrel.....	5 00	Starch.....	Pound.....	7
Flour, rye.....	Pound.....	2¼	Milk.....	Quart.....	6
Cornmeal.....	Pound.....	2	Beef, roast.....	Pound.....	18
Codfish.....	Pound.....	7	Beef, steak.....	Pound.....	16
Rice.....	Pound.....	9	Pork, fresh.....	Pound.....	14
Beans.....	Quart.....	9	Pork, salted.....	Pound.....	10
Tea, black.....	Pound.....	60	Ham, smoked.....	Pound.....	16
Tea, green.....	Pound.....	75	Lard.....	Pound.....	8
Tea, Japan.....	Pound.....	50	Mutton.....	Pound.....	14
Coffee, green.....	Pound.....	25	Veal.....	Pound.....	16
Coffee, roasted.....	Pound.....	29	Coal, soft.....	Ton.....	3 50
Cheese.....	Pound.....	16	Coal, hard.....	Ton.....	7 50
Butter.....	Pound.....	32	Calico, print.....	Yard.....	10
Eggs.....	Dozen.....	28	Sheeting, unbleached..	Yard.....	25
Potatoes.....	Bushel.....	1 00	Sheeting, bleached.....	Yard.....	25
Sugar, brown.....	Pound.....	6	Muslin, bleached.....	Yard.....	7
Sugar, coffee.....	Pound.....	6½	Muslin, unbleached....	Yard.....	6
Sugar, granulated.....	Pound.....	8	Shirting, unbleached..	Yard.....	7
Molasses.....	Gallon.....	60	Shirting, bleached.....	Yard.....	6
Syrup.....	Gallon.....	50	Flannel.....	Yard.....	40
Soap, common.....	Bar.....	7	Woolen dress goods....	Yard.....	65

Covington.

Flour, wheat.....	Barrel.....	4 80	Starch.....	Pound.....	5
Flour, rye.....	Pound.....	2	Milk.....	Quart.....	5
Cornmeal.....	Pound.....	2	Beef, roast.....	Pound.....	12
Codfish.....	Pound.....	10	Beef, steak.....	Pound.....	12½
Rice.....	Pound.....	8⅔	Pork, fresh.....	Pound.....	12
Beans.....	Quart.....	10	Pork, salted.....	Pound.....	10
Tea, black.....	Pound.....	50	Ham, smoked.....	Pound.....	12
Tea, green.....	Pound.....	60	Lard.....	Pound.....	8
Tea, Japan.....	Pound.....	75	Mutton.....	Pound.....	15
Coffee, green.....	Pound.....	25	Veal.....	Pound.....	15
Coffee, roasted.....	Pound.....	20	Coal, soft.....	Ton.....	4 00
Cheese.....	Pound.....	12½	Coal, hard.....	Ton.....	8 50
Butter.....	Pound.....	20	Calico, print.....	Yard.....	5
Eggs.....	Dozen.....	22	Sheeting, unbleached..	Yard.....	15
Potatoes.....	Bushel.....	90	Sheeting, bleached.....	Yard.....	20
Sugar, brown.....	Pound.....	6	Muslin, bleached.....	Yard.....	8
Sugar, coffee.....	Pound.....	7	Muslin, unbleached....	Yard.....	7
Sugar, granulated.....	Pound.....	8	Shirting, unbleached..	Yard.....	10
Molasses.....	Gallon.....	65	Shirting, bleached.....	Yard.....	10
Syrup.....	Gallon.....	65	Flannel.....	Yard.....	35
Soap, common.....	Bar.....	5	Woolen dress goods....	Yard.....	45

NECESSARIES OF LIFE—Continued.

Cardington.

Name of article.	Per—	Price.	Name of article.	Per—	Price.
Flour, wheat.....	Barrel	\$4 50	Starch.....	Pound.....	8 8
Flour, rye.....	Pound.....	2	Milk.....	Quart	5
Cornmeal	Pound.....	1½	Beef, roast.....	Pound.....	10
Codfish	Pound.....	10	Beef, steak.....	Pound.....	12
Rice	Pound.....	8	Pork, fresh	Pound.....	10
Beans	Quart	10	Pork, salted	Pound.....	10
Tea, black.....	Pound.....	50	Ham, smoked	Pound.....	12½
Tea, green	Pound.....	50	Lard	Pound.....	8
Tea, Japan.....	Pound.....	80	Mutton.....	Pound.....	10
Coffee, green.....	Pound.....	24	Veal.....	Pound.....	11
Coffee, roasted	Pound.....	27	Coal, soft	Ton	3 00
Cheese	Pound.....	14	Coal, hard	Ton	7 50
Butter.....	Pound.....	18	Calico, print.....	Yard	6¼
Eggs	Dozen	18	Sheeting, unbleached...	Yard	7½
Potatoes.....	Bushel	1 00	Sheeting bleached.....	Yard	8½
Sugar, brown.....	Pound.....	6¼	Muslin, bleached	Yard	7
Sugar, coffee	Pound.....	7	Muslin, unbleached.....	Yard	8
Sugar, granulated.....	Pound.....	8	Shirting, unbleached	Yard	10
Molasses	Gallon	40	Shirting bleached.....	Yard	10
Syrup	Gallon	40	Flannel	Yard	33⅓
Soap, common.....	Bar.....	5	Woolen dress goods.....	Yard	45

Coshocton.

Flour, wheat.....	Barrel	4 80	Starch.....	Pound.....	10
Flour, rye.....	Pound.....	2	Milk.....	Quart.....	6
Cornmeal.....	Pound.....	2	Beef, roast.....	Pound.....	10
Codfish	Pound.....	10	Beef, steak.....	Pound.....	12
Rice.....	Pound.....	9	Pork, fresh	Pound.....	10
Beans	Quart.....	6	Pork, salted	Pound.....	10
Tea, black.....	Pound.....	75	Ham, smoked	Pound.....	13
Tea, green	Pound.....	60	Lard.....	Pound.....	10
Tea, Japan.....	Pound.....	75	Mutton.....	Pound.....	10
Coffee, green.....	Pound.....	25	Veal.....	Pound.....	10
Coffee, roasted.....	Pound.....	28	Coal, soft.....	Ton	1 62½
Cheese	Pound.....	15	Coal, hard	Ton	6 25
Butter	Pound.....	20	Calico, print.....	Yard	7
Eggs	Dozen	20	Sheeting, unbleached...	Yard	15
Potatoes	Bushel	1 00	Sheeting, bleached.....	Yard	25
Sugar, brown	Pound.....	6	Muslin, bleached.....	Yard	7
Sugar, coffee	Pound.....	7	Muslin, unbleached.....	Yard	8
Sugar, granulated.....	Pound.....	8½	Shirting, unbleached	Yard	10
Molasses	Gallon	65	Shirting, bleached	Yard	10
Syrup	Gallon	50	Flannel	Yard	40
Soap, common.....	Bar	5	Woolen dress goods.....	Yard	60

Dayton.

Flour, wheat.....	Barrel	4 75	Starch.....	Pound.....	5
Flour, rye.....	Pound.....	2	Milk.....	Quart	6
Cornmeal.....	Pound.....	1½	Beef, roast.....	Pound.....	10
Codfish.....	Pound.....	8	Beef, steak.....	Pound.....	12
Rice.....	Pound.....	7	Pork, fresh	Pound.....	10
Beans	Quart	8	Pork, salted	Pound.....	10
Tea, black	Pound.....	65	Ham, smoked	Pound.....	12½
Tea, green	Pound.....	70	Lard.....	Pound.....	8
Tea, Japan.....	Pound.....	75	Mutton.....	Pound	7
Coffee, green.....	Pound.....	25	Veal.....	Pound.....	12½
Coffee, roasted	Pound.....	28	Coal, soft	Ton	3 75
Cheese	Pound.....	15	Coal, hard	Ton	7 50
Butter.....	Pound.....	25	Calico, print.....	Yard	7
Eggs	Dozen	25	Sheeting, unbleached...	Yard	8⅓
Potatoes.....	Bushel	1 00	Sheeting, bleached.....	Yard	14
Sugar, brown	Pound.....	6	Muslin, bleached.....	Yard	12½
Sugar, coffee	Pound.....	7	Muslin, unbleached.....	Yard	8⅓
Sugar, granulated	Pound.....	7½	Shirting, unbleached.....	Yard	8⅓
Molasses	Gallon	60	Shirting, bleached.....	Yard	8
Syrup	Gallon	50	Flannel	Yard	40
Soap, common.....	Bar	5	Woolen dress goods	Yard	75

NECESSARIES OF LIFE—Continued.

Dresden.

Name of article.	Per—	Price.	Name of article.	Per—	Price.
Flour, wheat.....	Barrel	\$4 25	Starch.....	Pound.....	8
Flour, rye.....	Pound.....	21 ¹ / ₄	Milk.....	Quart	4
Cornmeal	Pound.....	13 ³ / ₄	Beef, roast	Pound.....	9
Codfish	Pound.....	7	Beef, steak.....	Pound.....	12 ¹ / ₂
Rice.....	Pound.....	10	Pork, fresh	Pound.....	10
Beans	Quart	8	Pork, salted	Pound.....	11
Tea, black.....	Pound.....	60	Ham, smoked	Pound.....	14
Tea, green	Pound.....	65	Lard.....	Pound.....	10
Tea, Japan.....	Pound.....	70	Mutton.....	Pound.....	12 ¹ / ₂
Coffee, green	Pound.....	23	Veal.....	Pound.....	13
Coffee, roasted	Pound.....	25	Coal, soft	Ton	1 87
Cheese	Pound.....	12 ¹ / ₂	Coal, hard.....	Ton	6 75
Butter.....	Pound.....	18	Calico, print	Yard	8
Eggs.....	Dozen	16	Sheeting, unbleached...	Yard	18
Potatoes.....	Bushel	1 00	Sheeting, bleached.....	Yard	18
Sugar, brown	Pound.....	6	Muslin, bleached.....	Yard	10
Sugar, coffee	Pound.....	7	Muslin, unbleached.....	Yard	8
Sugar, granulated.....	Pound	8	Shirting, unbleached ..	Yard	14
Molasses	Gallon	50	Shirting, bleached	Yard	14
Syrup	Gallon	45	Flannel	Yard	50
Soap, common.....	Bar	5	Woolen dress goods.....	Yard	50

Eaton.

Flour, wheat.....	Barrel	4 00	Starch	Pound.....	5
Flour, rye.....	Pound.....	3	Milk.....	Quart	6
Cornmeal	Pound.....	1 ¹ / ₂	Beef, roast	Pound.....	12
Codfish	Pound.....	10	Beef, steak.....	Pound.....	12
Rice.....	Pound.....	10	Pork, fresh	Pound.....	10
Beans	Quart	10	Pork, salted	Pound.....	15
Tea, black.....	Pound.....	70	Ham, smoked	Pound.....	18
Tea, green.....	Pound.....	90	Lard	Pound.....	10
Tea, Japan.....	Pound.....	90	Mutton.....	Pound.....	10
Coffee, green	Pound.....	25	Veal.....	Pound.....	10
Coffee, roasted.....	Pound.....	30	Coal, soft	Ton	3 50
Cheese	Pound	15	Coal, hard.....	Ton	4 50
Butter	Pound.....	20	Calico, print.....	Yard	7
Eggs.....	Dozen	15	Sheeting, unbleached...	Yard	15
Potatoes.....	Bushel	90	Sheeting, bleached.....	Yard	18
Sugar, brown	Pound.....	5	Muslin, bleached.....	Yard	12
Sugar, coffee	Pound.....	6	Muslin, unbleached.....	Yard	10
Sugar, granulated.....	Pound.....	7	Shirting, unbleached ..	Yard	12 ¹ / ₂
Molasses	Gallon	60	Shirting, bleached.....	Yard	12 ¹ / ₂
Syrup	Gallon	1 00	Flannel	Yard	35
Soap, common.....	Bar	5	Woolen dress goods.....	Yard	50

East Liverpool.

Flour, wheat.....	Barrel	4 50	Starch	Pound.....	9
Flour, rye.....	Pound.....	2	Milk.....	Quart	8
Cornmeal	Pound.....	2	Beef, roast	Pound.....	15
Codfish	Pound.....	10	Beef, steak	Pound.....	18
Rice	Pound.....	8	Pork, fresh	Pound.....	12 ¹ / ₂
Beans	Quart.....	10	Pork, salted	Pound.....	10
Tea, black.....	Pound.....	50	Ham, smoked	Pound.....	12
Tea, green	Pound.....	80	Lard.....	Pound.....	9
Tea, Japan.....	Pound.....	50	Mutton.....	Pound.....	10
Coffee, green.....	Pound.....	24	Veal.....	Pound.....	12
Coffee, roasted.....	Pound.....	30	Coal, soft	Ton	2 00
Cheese	Pound.....	15	Coal, hard.....	Ton	None.
Butter.....	Pound.....	25	Calico, print.....	Yard	6 ¹ / ₄
Eggs.....	Dozen	28	Sheeting, unbleached...	Yard	25
Potatoes	Bushel	1 00	Sheeting, bleached.....	Yard	22
Sugar, brown	Pound.....	6	Muslin, bleached	Yard	12
Sugar, coffee	Pound.....	8	Muslin, unbleached.....	Yard	8
Sugar, granulated.....	Pound	9	Shirting, unbleached ..	Yard	9
Molasses	Gallon	70	Shirting, bleached.....	Yard	10
Syrup	Gallon	60	Flannel	Yard	50
Soap, common.....	Bar	5	Woolen dress goods	Yard	75

NECESSARIES OF LIFE—Continued.

Elyria.

Name of article.	Per—	Price.	Name of article.	Per—	Price.
Flour, wheat.....	Barrel	\$1 25	Starch	Pound.....	\$0 8
Flour, rye	Pound.....	2	Milk.....	Quart	6
Cornmeal	Pound.....	1½	Beef, roast.....	Pound.....	12½
Codfish	Pound.....	10	Beef, steak.....	Pound.....	12½
Rice.....	Pound.....	8	Pork, fresh	Pound.....	12½
Beans	Quart	10	Pork, salted	Pound.....	10
Tea, black.....	Pound.....	75	Ham, smoked.....	Pound.....	13
Tea, green.....	Pound.....	70	Lard	Pound.....	10
Tea, Japan.....	Pound.....	75	Mutton.....	Pound.....	12½
Coffee, green.....	Pound.....	20	Veal	Pound.....	12½
Coffee, roasted	Pound	25	Coal, soft.....	Ton	3 25
Cheese	Pound.....	15	Coal, hard.....	Ton	6 50
Butter	Pound.....	25	Calico, print	Yard	6
Eggs	Dozen	20	Sheeting, unbleached..	Yard	13
Potatoes	Bushel	1 00	Sheeting, bleached..	Yard	14
Sugar, brown	Pound	6½	Muslin, bleached.....	Yard	15
Sugar, coffee.....	Pound.....	6½	Muslin, unbleached	Yard	16
Sugar, granulated.....	Pound.....	7½	Shirting, unbleached ..	Yard	10
Molasses	Gallon.....	60	Shirting, bleached.....	Yard	12½
Syrup	Gallon.....	75	Flannel	Yard	60
Soap, common.....	Bar	5	Woolen dress goods	Yard	80

Fostoria.

Flour, wheat.....	Barrel	4 40	Starch	Pound.....	8
Flour, rye.....	Pound.....	2	Milk.....	Quart.....	10
Cornmeal	Pound.....	1½	Beef, roast.....	Pound.....	10
Codfish.....	Pound.....	9	Beef, steak	Pound.....	11
Rice.....	Pound.....	9	Pork, fresh	Pound.....	10
Beans	Quart.....	10	Pork, salted	Pound.....	10
Tea, black.....	Pound.....	60	Ham, smoked	Pound.....	12
Tea, green.....	Pound.....	65	Lard	Pound.....	8
Tea, Japan.....	Pound.....	70	Mutton.....	Pound..	12
Coffee, green.....	Pound.....	24	Veal	Pound.....	12½
Coffee, roasted ..	Pound.....	27	Coal, soft.....	Ton .....	.....
Cheese	Pound.....	16	Coal, hard.....	Ton .....	.....
Butter.....	Pound.....	20	Calico, print	Yard	8
Eggs.....	Dozen	20	Sheeting, unbleached..	Yard	12½
Potatoes.....	Bushel	1 00	Sheeting, bleached.....	Yard	12½
Sugar, brown	Pound.....	6	Muslin, bleached	Yard	15
Sugar, coffee	Pound	6½	Muslin, unbleached.....	Yard	10
Sugar, granulated.....	Pound.....	7½	Shirting, unbleached..	Yard	15
Molasses	Gallon	60	Shirting, bleached.....	Yard	13
Syrup	Gallon	50	Flannel	Yard	60
Soap, common.....	Bar	5	Woolen dress goods.....	Yard	70

Findlay.

Flour, wheat..	Barrel	4 40	Starch	Pound.....	.....
Flour, rye.....	Pound.....	2½	Milk	Quart	6
Cornmeal.....	Pound	2	Beef, roast.....	Pound.....	8
Codfish	Pound	10	Beef, steak	Pound.....	10
Rice	Pound	8	Pork, fresh	Pound.....	10
Beans	Quart	10	Pork, salted	Pound.....	10
Tea, black	Pound	60	Ham, smoked	Pound.....	15
Tea, green	Pound.....	60	Lard.....	Pound.....	10
Tea, Japan.....	Pound.....	60	Mutton.....	Pound.....	8
Coffee, green.....	Pound.....	25	Veal	Pound.....	10
Coffee, roasted	Pound.....	28	Coal, soft.....	Ton .....	.....
Cheese	Pound.....	15	Coal, hard.....	Ton .....	.....
Butter	Pound.....	22	Calico, print.....	Yard	5
Eggs	Dozen	22	Sheeting, unbleached..	Yard	20
Potatoes	Bushel	1 00	Sheeting, bleached.....	Yard	9½
Sugar, brown	Pound.....	6	Muslin, bleached.....	Yard	9
Sugar, coffee.....	Pound.....	7	Muslin, unbleached.....	Yard	7
Sugar, granulated.....	Pound.....	8	Shirting, unbleached....	Yard	8
Molasses	Gallon	60	Shirting, bleached.....	Yard	9
Syrup	Gallon	80	Flannel	Yard	30
Soap, common.....	Bar.....	5	Woolen dress goods	Yard	45

NECESSARIES OF LIFE—Continued.

Forest.

Name of article.	Per—	Price.	Name of article.	Per—	Price.
Flour, wheat.....	Barrel	\$4 60	Starch.....	Pound.....	\$0 10
Flour, rye.....	Pound.....	2	Milk.....	Quart	5
Cornmeal	Pound	1½	Beef, roast.....	Pound.....	10
Codfish	Pound.....	10	Beef, steak.....	Pound.....	12½
Rice.....	Pound	8	Pork, fresh.....	Pound.....	12½
Beans	Quart	7	Pork, salted	Pound.....	10
Tea, black.....	Pound.....	50	Ham, smoked.....	Pound.....	18
Tea, green.....	Pound.....	75	Lard	Pound.....	10
Tea, Japan.....	Pound.....	60	Mutton.....	Pound.....	12½
Coffee, green.....	Pound.....	22	Veal.....	Pound.....	12½
Coffee, roasted.....	Pound.....	28	Coal, soft.....	Ton	3 25
Cheese	Pound.....	16	Coal, hard.....	Ton	7 75
Butter	Pound.....	18	Calico, print	Yard	6
Eggs	Dozen	17	Sheeting, unbleached..	Yard	20
Potatoes	Bushel	1 00	Sheeting, bleached.....	Yard	25
Sugar, brown	Pound.....	6	Muslin, bleached	Yard	8
Sugar, coffee	Pound.....	7	Muslin, unbleached.....	Yard	6
Sugar, granulated....	Pound.....	8	Shirting, unbleached ..	Yard	10
Molasses	Gallon	60	Shirting, bleached	Yard	10
Syrup	Gallon	40	Flannel	Yard	35
Soap, common.....	Bar.....	5	Woolen dress goods....	Yard	60

Geneva.

Flour, wheat.....	Barrel	5 00	Starch	Pound.....	8
Flour, rye.....	Pound.....	2	Milk.....	Quart	5
Cornmeal	Pound.....	2	Beef, roast.....	Pound.....	10
Codfish	Pound.....	10	Beef, steak.....	Pound.....	12½
Rice.....	Pound.....	8	Pork, fresh.....	Pound.....	10
Beans	Quart	10	Pork, salted	Pound.....	10
Tea, black.....	Pound.....	50	Ham, smoked	Pound.....	12½
Tea, green	Pound.....	50	Lard	Pound.....	10
Tea, Japan.....	Pound.....	50	Mutton.....	Pound.....	10
Coffee, green.....	Pound.....	22	Veal.....	Pound.....	12
Coffee, roasted	Pound.....	28	Coal, soft.....	Ton	2 50
Cheese	Pound.....	14	Coal, hard.....	Ton	6 50
Butter	Pound.....	24	Calico, print.....	Yard	8
Eggs.....	Dozen	22	Sheeting, unbleached ..	Yard	9½
Potatoes	Bushel	1 00	Sheeting, bleached.....	Yard	20
Sugar, brown	Pound.....	6½	Muslin, bleached.....	Yard	9
Sugar, coffee.....	Pound.....	7	Muslin, unbleached....	Yard	8
Sugar, granulated.....	Pound.....	7½	Shirting, unbleached ..	Yard	8
Molasses	Gallon.....	60	Shirting, bleached	Yard	12
Syrup	Gallon.....	60	Flannel	Yard	65
Soap, common.....	Bar.....	5	Woolen dress goods....	Yard	80

Gallipolis.

Flour, wheat.....	Barrel	4 90	Starch	Pound.....	5
Flour, rye.....	Pound.....	2¼	Milk.....	Quart	3
Cornmeal	Pound.....	1½	Beef, roast.....	Pound.....	10
Codfish.....	Pound.....	6	Beef, steak.....	Pound.....	10
Rice	Pound.....	7½	Pork, fresh.....	Pound.....	10
Beans	Quart.....	12½	Pork, salted	Pound.....	8
Tea, black.....	Pound.....	70	Ham, smoked	Pound.....	15
Tea, green.....	Pound.....	70	Lard	Pound.....	10
Tea, Japan.....	Pound.....	70	Mutton.....	Pound.....	10
Coffee, green.....	Pound.....	25	Veal.....	Pound.....	10
Coffee, roasted	Pound.....	28	Coal, soft.....	Ton	1 75
Cheese	Pound.....	16	Coal, hard.....	Ton	8 50
Butter	Pound.....	20	Calico, print.....	Yard	5
Eggs	Dozen	23	Sheeting, unbleached..	Yard	6
Potatoes	Bushel	1 00	Sheeting, bleached.....	Yard	8
Sugar, brown	Pound.....	7	Muslin, bleached	Yard	9½
Sugar, coffee	Pound.....	7½	Muslin, unbleached....	Yard	6
Sugar, granulated..	Pound.....	8	Shirting, unbleached....	Yard	8
Molasses	Gallon.....	60	Shirting, bleached.....	Yard	8
Syrup	Gallon.....	60	Flannel	Yard	40
Soap, common.....	Bar	5	Woolen dress goods	Yard	75

NECESSARIES OF LIFE—Continued.

Granville.

Name of article.	Per—	Price.	Name of article.	Per—	Price.
Flour, wheat.....	Barrel	\$4 40	Starch	Pound.....	\$0 8
Flour, rye.....	Pound.	2	Milk.....	Quart.....	5
Cornmeal.....	Pound.....	2½	Beef, roast.....	Pound.....	12
Codfish.....	Pound.....	10	Beef, steak.....	Pound.....	13
Rice.....	Pound.....	10	Pork, fresh.....	Pound.....	10
Beans.....	Quart	7	Pork, salted.....	Pound.....	10
Tea, black.....	Pound.....	75	Ham, smoked.....	Pound.....	14
Tea, green.....	Pound.....	75	Lard.....	Pound.....	10
Tea, Japan.....	Pound..	75	Mutton.....	Pound.....	12
Coffee, green.....	Pound.....	25	Veal.....	Pound.....	8
Coffee, roasted.....	Pound.....	27	Coal, soft.....	Ton.....	2 50
Cheese.....	Pound.....	15	Coal, hard.....	Ton.....	7 50
Butter.....	Pound.....	23	Calico, print.....	Yard.....	8
Eggs.....	Dozen	18	Sheeting, unbleached..	Yard.....	10
Potatoes.....	Bushel	1 00	Sheeting, bleached.....	Yard.....	12
Sugar, brown.....	Pound.....	6½	Muslin, bleached.....	Yard.....	10
Sugar, coffee.....	Pound.....	7	Muslin, unbleached.....	Yard.....	10
Sugar, granulated.....	Pound.....	7½	Shirting, unbleached..	Yard.....	12
Molasses.....	Gallon	60	Shirting, bleached.....	Yard.....	45
Syrup.....	Gallon.....	50	Flannel.....	Yard.....	60
Soap, common.....	Bar.....	5	Woolen dress goods.....	Yard.....	

Girard.

Flour, wheat.....	Barrel	5 50	Starch	Pound.....	10
Flour, rye.....	Pound.....	2	Milk.....	Quart.....	8
Cornmeal.....	Pound.....	5	Beef, roast.....	Pound.....	14
Codfish.....	Pound.....	10	Beef, steak.....	Pound.....	14
Rice.....	Pound.....	10	Pork, fresh.....	Pound.....	12½
Beans.....	Quart	8	Pork, salted.....	Pound.....	10
Tea, black.....	Pound.....	60	Ham, smoked.....	Pound.....	14
Tea, green.....	Pound.....	65	Lard.....	Pound.....	11
Tea, Japan.....	Pound.....	80	Mutton.....	Pound.....	14
Coffee, green.....	Pound.....	25	Veal.....	Pound.....	14
Coffee, roasted.....	Pound	26	Coal, soft.....	Ton.....	2 75
Cheese.....	Pound.....	16	Coal, hard.....	Ton.....	6 75
Butter.....	Pound.....	28	Calico, print	Yard.....	8
Eggs.....	Dozen	22	Sheeting, unbleached..	Yard.....	12½
Potatoes.....	Bushel	1 00	Sheeting, bleached.....	Yard.....	15
Sugar, brown.....	Pound.....	7	Muslin, bleached.....	Yard.....	10
Sugar, coffee.....	Pound.....	9	Muslin, unbleached.....	Yard.....	10
Sugar, granulated.....	Pound.....	11	Shirting, unbleached ..	Yard.....	10
Molasses.....	Gallon.....	50	Shirting, bleached.....	Yard.....	11
Syrup.....	Gallon.....	75	Flannel.....	Yard.....	40
Soap, common.....	Bar.....	5	Woolen dress goods.....	Yard	65

Georgetown.

Flour, wheat.....	Barrel	4 00	Starch	Pound.....	5
Flour, rye.....	Pound.....	2	Milk.....	Quart.....	5
Cornmeal.....	Pound.....	1½	Beef, roast.....	Pound.....	10
Codfish.....	Pound.....	5	Beef, steak.....	Pound.....	12
Rice.....	Pound.....	6½	Pork, fresh.....	Pound.....	10
Beans.....	Quart.....	5	Pork, salted.....	Pound.....	12½
Tea, black.....	Pound.....	50	Ham, smoked.....	Pound.....	15
Tea, green.....	Pound.....	75	Lard.....	Pound.....	10
Tea, Japan.....	Pound.....	75	Mutton.....	Pound.....	7
Coffee, green.....	Pound.....	23	Veal.....	Pound.....	10
Coffee, roasted.....	Pound.....	27	Coal, soft.....	Ton.....	3 25
Cheese.....	Pound.....	15	Coal, hard.....	Ton.....	7 00
Butter.....	Pound.....	15	Calico, print.....	Yard.....	6
Eggs.....	Dozen	15	Sheeting, unbleached..	Yard.....	6¼
Potatoes.....	Bushel	75	Sheeting, bleached.....	Yard.....	8
Sugar, brown.....	Pound.....	6	Muslin, bleached.....	Yard.....	8
Sugar, coffee.....	Pound.....	6¼	Muslin, unbleached.....	Yard.....	7
Sugar, granulated.....	Pound.....	6½	Shirting, unbleached ..	Yard.....	9
Molasses.....	Gallon.....	60	Shirting, bleached.....	Yard.....	10
Syrup.....	Gallon.....	50	Flannel.....	Yard.....	30
Soap, common.....	Bar.....	5	Woolen dress goods.....	Yard.....	50

NECESSARIES OF LIFE—Continued.

Ironton.

Name of article.	Per—	Price.	Name of article.	Per—	Price.
Flour, wheat.....	Barrel	\$4 75	Starch	Pound.....	\$0 5
Flour, rye.....	Pound.....	2	Milk.....	Quart	8
Cornmeal	Pound.....	1½	Beef, roast.....	Pound	12½
Codfish	Pound.....	10	Beef, steak	Pound.....	12½
Rice.....	Pound.....	10	Pork, fresh.....	Pound.....	10
Beans	Quart	10	Pork, salted.....	Pound.....	10
Tea, black	Pound.....	60	Ham, smoked	Pound.....	14
Tea, green	Pound.....	65	Lard	Pound.....	10
Tea, Japan.....	Pound.....	75	Mutton.....	Pound.....	12½
Coffee, green.....	Pound.....	25	Veal.....	Pound.....	12½
Coffee, roasted	Pound.....	28	Coal, soft.....	Ton	2 00
Cheese	Pound.....	18	Coal hard	Ton	7 00
Butter.....	Pound.....	25	Calico, print.....	Yard	8
Eggs	Dozen	20	Sheeting, unbleached...	Yard	8
Potatoes	Bushel	1 00	Sheeting, bleached.....	Yard	10
Sugar, brown.....	Pound.....	6½	Muslin, bleached	Yard	10
Sugar, coffee.....	Pound.....	7	Muslin, unbleached.....	Yard	8
Sugar, granulated.....	Pound.....	8	Shirting, unbleached ..	Yard	8
Molasses	Gallon.....	50	Shirting, bleached.....	Yard	10
Syrup.....	Gallon.....	50	Flannel	Yard	30
Soap, common.....	Bar	5	Woolen dress goods.....	Yard	45

Lancaster.

Flour, wheat	Barrel	\$3 80	Starch	Pound.....	5
Flour, rye.....	Pound.....	2	Milk.....	Qnart.....	5
Cornmeal	Pound.....	1¼	Beef, roast.....	Pound.....	10
Codfish.....	Pound.....	10	Beef, steak	Pound.....	12
Rice	Pound.....	8	Pork, fresh	Pound.....	8
Beans	Quart	10	Pork, salted.....	Pound.....	9
Tea, black.....	Pound.....	60	Ham, smoked	Pound.....	12
Tea, green.....	Pound.....	60	Lard	Pound.....	8
Tea, Japan.....	Pound.....	60	Mutton.....	Pound.....	7
Coffee, green.....	Pound.....	20	Veal.....	Pound.....	8
Coffee, roasted.....	Pound.....	22	Coal, soft	Ton	1 60
Cheese	Pound.....	18	Coal, hard.....	Ton	7 00
Butter.....	Pound.....	15	Calico, print.....	Yard	6
Eggs	Dozen	12	Sheeting, unbleached...	Yard	20
Potatoes	Bushel.....	1 00	Sheeting, bleached.....	Yard	25
Sugar, brown	Pound	5½	Muslin, bleached	Yard	8
Sugar, coffee.....	Pound.....	6½	Muslin, unbleached.....	Yard	8
Sugar, granulated.....	Pound	8	Shirting, unbleached ..	Yard	8
Molasses	Gallon.....	60	Shirting, bleached.....	Yard	9
Syrup	Gallon	40	Flannel	Yard	40
Soap, common.....	Bar	5	Woolen dress goods.....	Yard	50

Jackson.

Flour, wheat.	Barrel	\$4 75	Starch	Pound.....	10
Flour, rye.....	Pound.....	2	Milk	Quart.....	8
Cornmeal	Pound	1	Beef, roast	Pound.....	10
Codfish	Pound.....	8	Beef, steak	Pound.....	12½
Rice	Pound.....	10	Pork, fresh.....	Pound.....	10
Beans	Quart	6	Pork, salted.....	Pound	12½
Tea, black.....	Pound.....	40	Ham, smoked.....	Pound.....	15
Tea, green.....	Pound.....	60	Lard	Pound.....	10
Tea, Japan.....	Pound	60	Mutton.....	Pound.....	10
Coffee, green.....	Pound.....	25	Veal.....	Pound.....	10
Coffee, roasted.....	Pound.....	28	Coal, soft.....	Ton	2 00
Cheese	Pound.....	15	Coal, hard.....	Ton	7 00
Butter	Pound	15	Calico, print.....	Yard	7
Eggs.....	Dozen	15	Sheeting, unbleached...	Yard	8
Potatoes	Bushel	1 00	Sheeting, bleached.....	Yard	10
Sugar, brown	Pound.....	6	Muslin, bleached.....	Yard	8
Sugar, coffee.....	Pound.....	8	Muslin unbleached.....	Yard	8
Sugar, granulated.....	Pound.....	8	Shirting, unbleached ..	Yard	10
Molasses	Gallon.....	75	Shirting, bleached	Yard	10
Syrup	Gallon.....	60	Flannel	Yard	40
Soap, common.....	Bar	5	Woolen dress goods.....	Yard	50

NECESSARIES OF LIFE—Continued.

Logan.

Name of article.	Per—	Price.	Name of article.	Per—	Price.
Flour, wheat.....	Barrel	\$4 50	Starch	Pound.....	\$ 5
Flour, rye.....	Pound.....	2	Milk.....	Quart.....	12½
Cornmeal.....	Pound.....	1¼	Beef, roast.....	Pound.....	15
Codfish.....	Pound.....	10	Beef, steak.....	Pound.....	12½
Rice.....	Pound.....	6	Pork, fresh	Pound.....	11
Beans	Quart	8	Pork, salted	Pound.....	16
Tea, black.....	Pound.....	40	Ham, smoked	Pound.....	8
Tea, green.....	Pound.....	50	Lard.....	Pound.....	12½
Tea, Japan	Pound.....	75	Mutton.....	Pound.....	.....
Coffee, green	Pound.....	25	Veal	Pound.....	12½
Coffee, roasted	Pound.....	28	Coal, soft	Ton	1 75
Cheese	Pound.....	15	Coal, hard.....	Ton	8 75
Butter	Pound.....	15	Calico, print.....	Yard	5
Eggs	Dozen	20	Sheeting, unbleached..	Yard	15
Potatoes.....	Bushel	1 00	Sheeting, bleached	Yard	18
Sugar, brown	Pound.....	7	Muslin, bleached	Yard	18
Sugar, coffee	Pound.....	8	Muslin, unbleached.....	Yard	5
Sugar, granulated.....	Pound.....	8⅓	Shirting, unbleached ..	Yard	7
Molasses	Gallon	50	Shirting, bleached	Yard	28
Syrup	Gallon	40	Flannel	Yard	25
Soap, common	Bar	5	Woolen dress goods.....	Yard	50

McArthur.

Flour, wheat.....	Barrel.....	\$4 00	Starch	Pound.....	10
Flour, rye.....	Pound.....	1¾	Milk.....	Quart.....	5
Cornmeal	Pound.....	1⅓	Beef, roast.....	Pound.....	8⅓
Codfish	Pound.....	10	Beef, steak.....	Pound.....	10
Rice	Pound.....	7½	Pork, fresh	Pound.....	10
Beans	Quart	10	Pork, salted	Pound.....	10
Tea, black.....	Pound.....	40	Ham, smoked	Pound	12½
Tea, green.....	Pound.....	60	Lard.....	Pound.....	8⅓
Tea, Japan	Pound.....	60	Mutton.....	Pound.....	8⅓
Coffee, green.....	Pound.....	25	Veal	Pound.....	10
Coffee, roasted.....	Pound.....	27	Coal, soft	Ton	1 37½
Cheese	Pound.....	15	Coal, hard	Ton	None.
Butter	Pound.....	18	Calico, print.....	Yard	5
Eggs	Dozen	20	Sheeting, unbleached..	Yard	20
Potatoes.....	Bushel	1 00	Sheeting, bleached.....	Yard	25
Sugar, brown.....	Pound.....	6½	Muslin, bleached.....	Yard	6½
Sugar, coffee	Pound.....	8	Muslin, unbleached.....	Yard	7½
Sugar, granulated.....	Pound.....	8⅓	Shirting, unbleached ..	Yard	6½
Molasses	Gallon	60	Shirting, bleached	Yard	7½
Syrup	Gallon	50	Flannel	Yard	40
Soap, common	Bar	5	Woolen dress goods.....	Yard	60

Millersburg.

Flour, wheat.....	Barrel	5 00	Starch	Pound.....	10
Flour, rye.....	Pound.....	2¼	Milk.....	Quart	5
Cornmeal	Pound.....	2	Beef, roast.....	Pound.....	12
Codfish	Pound	10	Beef, steak	Pound.....	12½
Rice	Pound.....	5	Pork, fresh	Pound.....	10
Beans	Quart	8	Pork, salted	Pound.....	9
Tea, black.....	Pound.....	70	Ham, smoked	Pound.....	12
Tea, green.....	Pound.....	75	Lard.....	Pound.....	9
Tea, Japan	Pound.....	75	Mutton	Pound.....	12½
Coffee, green.....	Pound.....	18	Veal.....	Pound.....	15
Coffee, roasted.....	Pound.....	18	Coal, soft	Ton	2 50
Cheese	Pound.....	12	Coal, hard	Ton	8 50
Butter	Pound.....	15	Calico, print.....	Yard	5
Eggs	Dozen	20	Sheeting, unbleached..	Yard	15
Potatoes.....	Bushel	1 00	Sheeting, bleached.....	Yard	20
Sugar, brown	Pound.....	6	Muslin, bleached.....	Yard	8
Sugar, coffee	Pound.....	7	Muslin, unbleached.....	Yard	4
Sugar, granulated.....	Pound.....	7	Shirting, unbleached....	Yard	8
Molasses	Gallon	50	Shirting, bleached	Yard	12½
Syrup	Gallon	60	Flannel	Yard	25
Soap, common	Bar	5	Woolen dress goods.....	Yard	40

NECESSARIES OF LIFE—Continued.

Marysville.

Name of article.	Per—	Price.	Name of article.	Per—	Price.
Flour, wheat.....	Barrel	\$4 40	Starch	Pound.....	\$ 5
Flour, rye.....	Pound.....	2	Milk.....	Quart	5
Cornmeal.....	Pound.....	1½	Beef, roast.....	Pound.....	10
Codfish	Pound.....	10	Beef, steak.....	Pound.....	16
Rice	Pound.....	8	Pork, fresh	Pound.....	10
Beans	Quart.....	6	Pork, salted	Pound.....	10
Tea, black.....	Pound.....	75	Ham, smoked	Pound.....	14
Tea, green.....	Pound.....	50	Lard	Pound.....	10
Tea, Japan	Pound.....	50	Mutton.....	Pound.....	14
Coffee, green.....	Pound.....	28	Veal.....	Pound.....	13
Coffee, roasted	Pound.....	25	Coal soft	Ton	3 50
Cheese	Pound.....	15	Coal, hard.....	Ton	7 50
Butter.....	Pound.....	20	Calico, print.....	Yard	5
Eggs.....	Dozen	20	Sheeting, unbleached...	Yard	10
Potatoes.....	Bushel	90	Sheeting bleached	Yard	12½
Sugar, brown.....	Pound.. ..	6½	Muslin, bleached	Yard	8
Sugar, coffee	Pound.....	7	Muslin, unbleached	Yard	8
Sugar, granulated	Pound.....	7½	Shirting, unbleached....	Yard	9
Molasses	Gallon	50	Shirting, bleached.....	Yard	9
Syrup	Gallon	70	Flannel	Yard	50
Soap, common	Bar	5	Woolen dress goods.....	Yard	75

Mt. Vernon.

Flour, wheat.....	Barrel	4 60	Starch.....	Pound.....	5
Flour, rye.....	Pound.....	2½	Milk.....	Quart	6
Cornmeal	Pound.....	2	Beef, roast.....	Pound.....	10
Codfish	Pound.....	10	Beef, steak	Pound.....	12
Rice	Pound.....	8	Pork, fresh	Pound.....	10
Beans	Quart.....	10	Pork, salted	Pound.....	10
Tea, black.....	Pound.....	50	Ham, smoked	Pound.....	14
Tea, green.....	Pound.....	60	Lard	Pound.....	10
Tea, Japan.....	Pound.....	65	Mutton.....	Pound.....	12
Coffee, green.....	Pound.....	25	Veal.....	Pound.....	14
Coffee, roasted	Pound.....	28	Coal, soft.....	Ton	3 25
Cheese	Pound.....	15	Coal, hard.....	Ton.....	6 00
Butter.....	Pound.....	22	Calico, print.....	Yard	6¼
Eggs.....	Dozen	20	Sheeting, unbleached ..	Yard	25
Potatoes	Bushel	90	Sheeting, bleached.....	Yard	13
Sugar, brown.....	Pound.....	5	Muslin, bleached.....	Yard	8
Sugar, coffee	Pound.....	7	Muslin, unbleached.....	Yard	7
Sugar, granulated.....	Pound.....	8	Shirting unbleached....	Yard	8
Molasses	Gallon	60	Shirting, bleached	Yard	8
Syrup	Gallon	50	Flannel	Yard	25
Soap, common.....	Bar	5	Woolen dress goods	Yard	60

Nelsonville.

Flour, wheat.....	Barrel	4 40	Starch	Pound.....	10
Flour, rye.....	Pound.....	2¼	Milk.....	Quart	6
Cornmeal	Pound.....	2	Beef, roast.....	Pound.....	12½
Codfish.....	Pound.....	10	Beef, steak.....	Pound.....	12½
Rice	Pound.....	10	Pork, fresh	Pound.....	10
Beans	Quart	8	Pork, salted	Pound.....	12½
Tea, black	Pound.....	65	Ham, smoked	Pound.....	15
Tea, green	Pound.....	60	Lard	Pound.....	10
Tea, Japan	Pound.....	75	Mutton	Pound.....	10
Coffee, green	Pound.....	20	Veal	Pound	10
Coffee, roasted	Pound.....	28	Coal, soft	Ton	1 50
Cheese	Pound.....	15	Coal, hard.....	Ton	6 50
Butter.....	Pound.....	23	Calico, print.....	Yard	6
Eggs.....	Dozen	25	Sheeting, unbleached...	Yard	7
Potatoes	Bushel.....	1 20	Sheeting, bleached.....	Yard	8
Sugar, brown	Pound.....	6¼	Muslin, bleached.....	Yard	9
Sugar, coffee	Pound.....	8½	Muslin, unbleached.....	Yard	8
Sugar, granulated.....	Pound.....	12½	Shirting, unbleached ..	Yard	10
Molasses	Gallon	60	Shirting, bleached	Yard	12½
Syrup	Gallon ..	75	Flannel	Yard	35
Soap, common	Bar	5	Woolen dress goods	Yard	65

NECESSARIES OF LIFE—Continued.

Oak Harbor.

Name of article.	Per—	Price.	Name of article.	Per—	Price.
Flour, wheat.....	Barrel.....	\$4 40	Starch.....	Pound.....	\$0 6
Flour, rye.....	Pound.....	2	Milk.....	Quart.....	5
Cornmeal.....	Pound.....	1 ¹ / ₄	Beef, roast.....	Pound.....	12
Codfish.....	Pound.....	10	Beef, steak.....	Pound.....	12 ¹ / ₂
Rice.....	Pound.....	7	Pork, fresh.....	Pound.....	10
Beans.....	Quart.....	10	Pork, salted.....	Pound.....	10
Tea, black.....	Pound.....	50	Ham, smoked.....	Pound.....	13
Tea, green.....	Pound.....	60	Lard.....	Pound.....	9
Tea, Japan.....	Pound.....	30	Mutton.....	Pound.....	12 ¹ / ₂
Coffee, green.....	Pound.....	25	Veal.....	Pound.....	10
Coffee, roasted.....	Pound.....	25	Coal, soft.....	Ton.....	3 50
Cheese.....	Pound.....	16	Coal, hard.....	Ton.....	7 00
Butter.....	Pound.....	22	Calico, print.....	Yard.....	7
Eggs.....	Dozen.....	21	Sheeting, unbleached..	Yard.....	18
Potatoes.....	Bushel.....	1 00	Sheeting, bleached.....	Yard.....	18
Sugar, brown.....	Pound.....	5	Muslin, bleached.....	Yard.....	10
Sugar, coffee.....	Pound.....	6 ¹ / ₄	Muslin, unbleached.....	Yard.....	8
Sugar, granulated.....	Pound.....	8	Shirting, unbleached..	Yard.....	15
Molasses.....	Gallon.....	50	Shirting, bleached.....	Yard.....	13
Syrup.....	Gallon.....	40	Flannel.....	Yard.....	40
Soap, common.....	Bar.....	5	Woolen dress goods.....	Yard.....	80

Pataskala.

Flour, wheat.....	Barrel.....	4 25	Starch.....	Pound.....	8
Flour, rye.....	Pound.....	2	Milk.....	Quart.....	5
Cornmeal.....	Pound.....	10	Beef, roast.....	Pound.....	8
Codfish.....	Pound.....	10	Beef, steak.....	Pound.....	10
Rice.....	Pound.....	8	Pork, fresh.....	Pound.....	10
Beans.....	Quart.....	10	Pork, salted.....	Pound.....	10
Tea, black.....	Pound.....	70	Ham, smoked.....	Pound.....	12
Tea, green.....	Pound.....	70	Lard.....	Pound.....	10
Tea, Japan.....	Pound.....	75	Mutton.....	Pound.....	10
Coffee, green.....	Pound.....	23	Veal.....	Pound.....	10
Coffee, roasted.....	Pound.....	25	Coal, soft.....	Ton.....	2 75
Cheese.....	Pound.....	15	Coal, hard.....	Ton.....	6 25
Butter.....	Pound.....	22	Calico, print.....	Yard.....	7
Eggs.....	Dozen.....	18	Sheeting, unbleached..	Yard.....	12 ¹ / ₂
Potatoes.....	Bushel.....	1 00	Sheeting, bleached.....	Yard.....	12
Sugar, brown.....	Pound.....	6	Muslin, bleached.....	Yard.....	8 ¹ / ₃
Sugar, coffee.....	Pound.....	7	Muslin, unbleached....	Yard.....	7
Sugar, granulated.....	Pound.....	7	Shirting, unbleached..	Yard.....	8
Molasses.....	Gallon.....	60	Shirting, bleached.....	Yard.....	10
Syrup.....	Gallon.....	40	Flannel.....	Yard.....	35
Soap, common.....	Bar.....	5	Woolen dress goods.....	Yard.....	50

Pennsville.

Flour, wheat.....	Barrel.....	4 00	Starch.....	Pound.....	10
Flour, rye.....	Pound.....	2	Milk.....	Quart.....	5
Cornmeal.....	Pound.....	1 ³ / ₄	Beef, roast.....	Pound.....	8
Codfish.....	Pound.....	5	Beef, steak.....	Pound.....	10
Rice.....	Pound.....	6 ¹ / ₂	Pork, fresh.....	Pound.....	8
Beans.....	Quart.....	8	Pork, salted.....	Pound.....	10
Tea, black.....	Pound.....	80	Ham, smoked.....	Pound.....	15
Tea, green.....	Pound.....	45	Lard.....	Pound.....	8
Tea, Japan.....	Pound.....	75	Mutton.....	Pound.....	10
Coffee, green.....	Pound.....	25	Veal.....	Pound.....	8
Coffee, roasted.....	Pound.....	28	Coal, soft.....	Ton.....	3 50
Cheese.....	Pound.....	15	Coal, hard.....	Ton.....	7 00
Butter.....	Pound.....	18	Calico, print.....	Yard.....	6
Eggs.....	Dozen.....	20	Sheeting, unbleached..	Yard.....	7
Potatoes.....	Bushel.....	1 00	Sheeting, bleached.....	Yard.....	10
Sugar, brown.....	Pound.....	6	Muslin, bleached.....	Yard.....	10
Sugar, coffee.....	Pound.....	7	Muslin, unbleached....	Yard.....	10
Sugar, granulated.....	Pound.....	8	Shirting, unbleached..	Yard.....	8
Molasses.....	Gallon.....	50	Shirting, bleached.....	Yard.....	10
Syrup.....	Gallon.....	40	Flannel.....	Yard.....	25
Soap, common.....	Bar.....	5	Woolen dress goods....	Yard.....	60

NECESSARIES OF LIFE—Continued.

Shelby.

Name of article.	Per—	Price.	Name of article.	Per—	Price.
Flour, wheat.....	Barrel	\$4 60	Starch.....	Pound	\$0 8
Flour, rye.....	Pound.....	2½	Milk.....	Quart	5
Cornmeal.....	Pound.....	2	Beef, roast.....	Pound.....	10
Codfish	Pound.....	10	Beef, steak.....	Pound.....	12½
Rice.....	Pound.....	10	Pork, fresh.....	Pound.....	9
Beans	Quart	8	Pork, salted.....	Pound.....	10
Tea, black.....	Pound.....	40	Ham, smoked.....	Pound.....	12½
Tea, green.....	Pound.....	60	Lard.....	Pound.....	10
Tea, Japan.....	Pound.....	70	Mutton.....	Pound.....	9
Coffee, green.....	Pound.....	25	Veal.....	Pound.....	9
Coffee, roasted.....	Pound.....	28	Coal, soft.....	Ton	2 75
Cheese	Pound.....	14	Coal, hard.....	Ton	6 50
Butter	Pound.....	20	Calico, print.....	Yard	6¼
Eggs	Dozen	18	Sheeting, unbleached..	Yard	18
Potatoes	Bushel	1 00	Sheeting, bleached.....	Yard	18
Sugar, brown.....	Pound.....	6¼	Muslin, bleached.....	Yard	10½
Sugar, coffee.....	Pound.....	7	Muslin, unbleached....	Yard	8¼
Sugar, granulated.....	Pound	8	Shirting, unbleached..	Yard	8
Molasses	Gallon.....	60	Shirting, bleached....	Yard	10
Syrup	Gallon.....	50	Flannel	Yard	35
Soap, common.....	Bar.....	5	Woolen dress goods. .	Yard	80

Springfield.

Flour, wheat.....	Barrel	5 00	Starch	Pound	5
Flour, rye.....	Pound.....	2¼	Milk.....	Quart	6
Cornmeal.....	Pound.....	2	Beef, roast.....	Pound.....	10
Codfish	Pound.....	10	Beef, steak.....	Pound.....	12
Rice.....	Pound.....	10	Pork, fresh.....	Pound.....	9
Beans	Quart	10	Pork, salted.....	Pound.....	14
Tea, black.....	Pound.....	60	Ham, smoked.....	Pound.....	14
Tea, green.....	Pound.....	65	Lard.....	Pound.....	10
Tea, Japan.....	Pound.....	70	Mutton.....	Pound.....	8
Coffee, green.....	Pound.....	25	Veal.....	Pound.....	12½
Coffee, roasted.....	Pound.....	25	Coal, soft.....	Ton	3 50
Cheese	Pound.....	15	Coal, hard	Ton	7 25
Butter.....	Pound	23	Calico, print.....	Yard	7
Eggs	Dozen	25	Sheeting, unbleached..	Yard	15
Potatoes	Bushel	1 00	Sheeting, bleached.....	Yard	18
Sugar, brown.....	Pound.....	6	Muslin, bleached.....	Yard	10
Sugar, coffee.....	Pound.....	7	Muslin, unbleached....	Yard	8
Sugar, granulated.....	Pound.....	7½	Shirting, unbleached..	Yard	13
Molasses	Gallon.....	50	Shirting, bleached.....	Yard	14
Syrup	Gallon.....	40	Flannel	Yard	45
Soap, common.....	Bar.....	5	Woolen dress goods....	Yard	65

Steubenville.

Flour, wheat.....	Barrel	4 40	Starch	Pound.....	5
Flour, rye.....	Pound.....	2½	Milk.....	Quart	6
Cornmeal.....	Pound.....	1¾	Beef, roast.....	Pound.....	12½
Codfish	Pound.....	8	Beef, steak.....	Pound.....	15
Rice	Pound.....	8	Pork, fresh.....	Pound.....	12½
Beans	Quart	10	Pork, salted.....	Pound.....	10
Tea, black.....	Pound.....	50	Ham, smoked.....	Pound.....	14
Tea, green.....	Pound.....	60	Lard	Pound.....	10
Tea, Japan.....	Pound.....	80	Mutton.....	Pound.....	15
Coffee, green.....	Pound.....	25	Veal	Pound.....	15
Coffee, roasted.....	Pound.....	25	Coal, soft.....	Ton	1 75
Cheese	Pound.....	16	Coal, hard.....	Ton	7 00
Butter.....	Pound.....	25	Calico, print	Yard	8
Eggs	Dozen	25	Sheeting, unbleached..	Yard	12
Potatoes	Bushel	1 00	Sheeting, bleached.....	Yard	12½
Sugar, brown.....	Pound	6¾	Muslin, bleached.....	Yard	12½
Sugar, coffee.....	Pound.....	7	Muslin, unbleached....	Yard	12
Sugar, granulated.....	Pound.....	8	Shirting, unbleached..	Yard	15
Molasses	Gallon	60	Shirting, bleached.....	Yard	12
Syrup	Gallon.....	60	Flannel	Yard	40
Soap, common.....	Bar.....	5	Woolen dress goods....	Yard	60

NECESSARIES OF LIFE—Continued.

Van Wert.

Name of article.	Per—	Price.	Name of article.	Per—	Price.
Flour, wheat.....	Barrel	\$4 00	Starch	Pound.....	\$0 5
Flour, rye.....	Pound.....	2½	Milk.....	Quart	4
Cornmeal.....	Pound.....	1	Beef, roast.....	Pound.....	10
Codfish	Pound.....	10	Beef, steak.....	Pound.....	12½
Rice.....	Pound.....	8⅓	Pork, fresh.....	Pound.....	10
Beans	Quart	8	Pork, salted	Pound.....	9
Tea, black.....	Pound.....	75	Ham, smoked	Pound.....	14
Tea, green	Pound.....	75	Lard	Pound.....	9
Tea, Japan.....	Pound.....	50	Mutton.....	Pound.....	10
Coffee, green.....	Pound.....	25	Veal.....	Pound.....	12½
Coffee, roasted	Pound.....	27	Coal, soft.....	Ton	2 75
Cheese	Pound.....	15	Coal, hard.....	Ton .....	.....
Butter.....	Pound.....	20	Calico, print.....	Yard	6¼
Eggs	Dozen	22	Sheeting, unbleached..	Yard	8¾
Potatoes	Bushel	1 10	Sheeting, bleached.....	Yard	10
Sugar, brown.....	Pound.....	6¼	Muslin, bleached.....	Yard	10
Sugar, coffee.....	Pound.....	8⅓	Muslin, unbleached....	Yard	7
Sugar, granulated.....	Pound.....	8⅓	Shirting, unbleached ..	Yard	10
Molasses	Gallon	50	Shirting, bleached.....	Yard	10
Syrup	Gallon	50	Flannel	Yard	40
Soap, common.....	Bar	5	Woolen dress goods.....	Yard	60

West Union.

Flour, wheat.....	Barrel	4 50	Starch	Pound.....	5
Flour, rye.....	Pound.....	1¾	Milk	Quart	5
Cornmeal.....	Pound.....	1½	Beef, roast.....	Pound.....	8
Codfish	Pound.....	7½	Beef, steak.....	Pound.....	10
Rice.....	Pound.....	10	Pork, fresh.....	Pound.....	10
Beans	Quart	10	Pork, salted	Pound.....	10
Tea, black.....	Pound.....	50	Ham, smoked.....	Pound.....	13
Tea, green	Pound.....	60	Lard	Pound.....	10
Tea, Japan.....	Pound.....	65	Mutton.....	Pound.....	10
Coffee, green.....	Pound.....	27	Veal.....	Pound.....	10
Coffee, roasted	Pound.....	15	Coal, soft.....	Ton	2 25
Cheese	Pound.....	16	Coal, hard.....	Ton	3 75
Butter	Pound.....	18	Calico, print	Yard	6
Eggs	Dozen	18	Sheeting, unbleached..	Yard	20
Potatoes	Bushel	1 20	Sheeting, bleached.....	Yard	25
Sugar, brown	Pound.....	6½	Muslin, bleached.....	Yard	10
Sugar, coffee.....	Pound.....	7½	Muslin, unbleached....	Yard	8⅓
Sugar, granulated	Pound.....	8⅓	Shirting, unbleached ..	Yard	10
Molasses	Gallon	60	Shirting, bleached	Yard	12
Syrup	Gallon	45	Flannel	Yard	40
Soap, common.....	Bar	5	Woolen dress goods.....	Yard	50

Washington.

Flour, wheat.....	Barrel	4 25	Starch	Pound.....	8
Flour, rye.....	Pound	2½	Milk	Quart.....	5
Cornmeal.....	Pound.....	1¼	Beef, roast.....	Pound.....	11
Codfish	Pound.....	10	Beef, steak.....	Pound.....	12½
Rice.....	Pound.....	8	Pork, fresh.....	Pound.....	10
Beans	Quart	8	Pork, salted	Pound.....	10
Tea, black	Pound.....	60	Ham, smoked	Pound	13
Tea, green.....	Pound.....	70	Lard	Pound.....	10
Tea, Japan.....	Pound.....	60	Mutton.....	Pound.....	9
Coffee, green.....	Pound.....	23	Veal	Pound.....	14
Coffee, roasted.....	Pound.....	27	Coal, soft.....	Ton	2 75
Cheese	Pound.....	15	Coal, hard	Ton	7 00
Butter	Pound.....	20	Calico, print	Yard	7
Eggs	Dozen	18	Sheeting, unbleached..	Yard	20
Potatoes	Bushel	1 00	Sheeting, bleached.....	Yard	13
Sugar, brown	Pound.....	6¼	Muslin, bleached.....	Yard	8
Sugar, coffee.....	Pound.....	7	Muslin, unbleached....	Yard	8
Sugar, granulated.....	Pound.....	8	Shirting, unbleached ..	Yard	8
Molasses	Gallon	45	Shirting, bleached	Yard	12
Syrup	Gallon	40	Flannel	Yard	30
Soap, common.....	Bar	5	Woolen dress goods.....	Yard	45

NECESSARIES OF LIFE—Continued.

Waverly.

Name of article.	Per—	Price.	Name of article.	Per—	Price.
Flour, wheat.....	Barrel	\$4 75	Starch	Pound.....	\$0 5
Flour, rye.....	Pound.....	2	Milk.....	Quart	5
Cornmeal	Pound.....	1¼	Beef, roast.....	Pound.....	12½
Codfish	Pound.....	8	Beef, steak	Pound.....	12½
Rice.....	Pound.....	10	Pork, fresh	Pound.....	10
Beans	Quart	8	Pork, salted.....	Pound.....	10
Tea, black.....	Pound.....	40	Ham, smoked	Pound.....	12½
Tea, green.....	Pound.....	80	Lard	Pound.....	10
Tea, Japan.....	Pound	65	Mutton	Pound.....	8
Coffee, green.....	Pound.....	25	Veal.....	Pound.....	12
Coffee, roasted	Pound.....	28	Coal, soft	Ton	2 75
Cheese	Pound.....	15	Coal, hard.....	Ton	6 75
Butter	Pound.....	20	Calico, print.....	Yard	7
Eggs	Dozen	16	Sheeting, unbleached..	Yard	12
Potatoes	Bushel	1 20	Sheeting, bleached.....	Yard	10
Sugar, brown	Pound	6	Muslin, bleached.....	Yard	10
Sugar, coffee	Pound.....	8	Muslin, unbleached.....	Yard	12
Sugar, granulated	Pound.....	8½	Shirting, unbleached ..	Yard	13
Molasses	Gallon.....	40	Shirting, bleached	Yard	14
Syrup	Gallon.....	60	Flannel	Yard	40
Soap, common	Bar	6	Woolen dress goods.....	Yard	60

Wooster.

Flour, wheat.....	Barrel	6 00	Starch	Pound.....	5
Flour, rye.....	Pound	2	Milk.....	Quart	6
Cornmeal	Pound.....	2½	Beef, roast.....	Pound	13
Codfish	Pound.....	10	Beef, steak	Pound	14
Rice.....	Pound.....	8	Pork, fresh	Pound.....	10
Beans	Quart.....	5	Pork, salted	Pound.....	12½
Tea, black.....	Pound.....	60	Ham, smoked	Pound.....	18
Tea, green	Pound.....	50	Lard	Pound	10
Tea, Japan.....	Pound.....	65	Mutton	Pound.....	10
Coffee, green.....	Pound.....	25	Veal.....	Pound.....	12
Coffee, roasted.....	Pound	27	Coal, soft	Ton	3 40
Cheese	Pound.....	18	Coal, hard	Ton	8 00
Butter.....	Pound.....	22	Calico, print	Yard	6¼
Eggs	Dozen	22	Sheeting, unbleached..	Yard	25
Potatoes	Bu-hel	1 00	Sheeting, bleached.....	Yard	25
Sugar, brown	Pound.....	6½	Muslin, bleached	Yard	9
Sugar, coffee	Pound.....	7	Muslin, unbleached.....	Yard	8
Sugar, granulated	Pound.....	7½	Shirting, unbleached ..	Yard	12
Molasses	Gallon	80	Shirting, bleached	Yard	12
Syrup	Gallon	60	Flannel	Yard	60
Soap, common.....	Bar.....	5	Woolen dress goods....	Yard	65

Warren.

Flour, wheat.....	Barrel	4 00	Starch	Pound.....	8
Flour, rye.....	Pound.....	2	Milk.....	Quart	6
Cornmeal	Pound.....	1½	Beef, roast.....	Pound.....	11
Codfish	Pound.....	10	Beef, steak	Pound.....	12½
Rice	Pound.....	8	Pork, fresh	Pound.....	10
Beans	Quart	10	Pork, salted	Pound.....	10
Tea, black	Pound.....	40	Ham, smoked	Pound.....	12½
Tea, green	Pound.....	65	Lard	Pound.....	10
Tea, Japan.....	Pound.....	75	Mutton.....	Pound.....	12½
Coffee, green.....	Pound.....	20	Veal.....	Pound.....	15
Coffee, roasted	Pound	25	Coal, soft.....	Ton	2 15
Cheese	Pound.....	12½	Coal, hard.....	Ton	6 25
Butter	Pound.....	25	Calico, print.....	Yard	7
Eggs	Dozen	22	Sheeting, unbleached..	Yard	18
Potatoes	Bushel	95	Sheeting, bleached.....	Yard	18
Sugar, brown	Pound.....	6	Muslin, bleached	Yard	9
Sugar, coffee	Pound.....	7	Muslin, unbleached.....	Yard	9
Sugar, granulated.....	Pound.....	8	Shirting, unbleached ..	Yard	12
Molasses	Gallon	60	Shirting, bleached.....	Yard	12½
Syrup	Gallon	60	Flannel	Yard	40
Soap, common.....	Bar.....	5	Woolen dress goods	Yard	75

NECESSARIES OF LIFE—Concluded.

Youngstown.

Name of article.	Per—	Price.	Name of article.	Per—	Price.
Flour, wheat	Barrel	\$4 25	Starch	Pound	\$0 10
Flour, rye	Pound	5	Milk	Quart	8
Cornmeal	Pound	1½	Beef, roast	Pound	10
Codfish	Pound	9	Beef, steak	Pound	12½
Rice	Pound	7	Pork, fresh	Pound	11
Beans	Quart	12	Pork, salted	Pound	11
Tea, black	Pound	50	Ham, smoked	Pound	9
Tea, green	Pound	50	Lard	Pound	12½
Tea, Japan	Pound	60	Mutton	Pound	12½
Coffee, green	Pound	20	Veal	Pound	2 50
Coffee, roasted	Pound	20	Coal, soft	Ton	8 50
Cheese	Pound	15	Coal, hard	Ton	7
Butter	Pound	25	Calico, print	Yard	20
Eggs	Dozen	22	Sheeting, unbleached ..	Yard	20
Potatoes	Bushel	80	Sheeting, bleached	Yard	10
Sugar, brown	Pound	5	Muslin, bleached	Yard	8
Sugar, coffee	Pound	6½	Muslin, unbleached	Yard	9
Sugar, granulated	Pound	7	Shirting, unbleached	Yard	12½
Molasses	Gallon	40	Shirting, bleached	Yard	35
Syrup	Gallon	70	Flannel	Yard	60
Soap, common	Bar	7½	Woollen dress goods	Yard	

Zanesville.

Flour, wheat	Barrel	4 50	Starch	Pound	5
Flour, rye	Pound	2	Milk	Quart	6
Cornmeal	Pound	1¼	Beef, roast	Pound	12
Codfish	Pound	8	Beef, steak	Pound	12
Rice	Pound	6	Pork, fresh	Pound	10
Beans	Quart	8	Pork, salted	Pound	8
Tea, black	Pound	50	Ham, smoked	Pound	12½
Tea, green	Pound	60	Lard	Pound	10
Tea, Japan	Pound	50	Mutton	Pound	10
Coffee, green	Pound	25	Veal	Pound	10
Coffee, roasted	Pound	27	Coal, soft	Ton	1 75
Cheese	Pound	15	Coal, hard	Ton	6 50
Butter	Pound	22	Calico, print	Yard	6
Eggs	Dozen	20	Sheeting, unbleached ..	Yard ..	20
Potatoes	Bushel	1 00	Sheeting, bleached	Yard	25
Sugar, brown	Pound	6	Muslin, bleached	Yard	8
Sugar, coffee	Pound	7	Muslin, unbleached	Yard	7
Sugar, granulated	Pound	8	Shirting, unbleached ..	Yard	8
Molasses	Gallon	50	Shirting, bleached	Yard	8
Syrup	Gallon	40	Flannel	Yard	35
Soap, common	Bar	5	Woollen dress goods	Yard	50

PART V.

WAGES OF WORKINGMEN.

This part embraces the real work of the statistical agents of this Bureau, and furnishes the information secured in nearly all the towns and cities in the State having industries. The work has been as thoroughly done as possible throughout the State, but in some towns it was more thorough than in others. Some of the agents secured the statistics of every person employed in their town, and in this way some of the towns appear to better advantage than others where the agents were less industrious. These tables, however, will be of great interest to every workingman and every employer in the State.

TABLE SHOWING THE AMOUNT OF WAGES PAID THROUGHOUT THE STATE AND THE HOURS OF LABOR.

Lima, Allen County.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Apprentices.....	30	7	\$0 35	10	1	.....	\$1 25	10	19	.....	\$1 30	10
Agents.....	2	.....	1 50	10	2	.....	2 50	10	.....	.....	.....	.....
Boss hand.....	1	.....	67	10	.....	.....	.....	.....	.....	.....	.....	.....
Bolt cutters.....	4	.....	75	10	.....	.....	.....	.....	.....	.....	.....	.....
Bookkeepers.....	1	.....	1 93	10	.....	1	2 00	10	1	.....	2 12	10
Buyers.....	2	.....	1 84	10	.....	.....	.....	.....	.....	.....	.....	.....
Brewers.....	6	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Bookbinders.....	2	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Box makers.....	5	.....	1 13	10	.....	.....	.....	.....	.....	.....	.....	.....
Boiler makers.....	5	.....	2 50	10	3	.....	3 00	10	5	.....	2 00	10
Boiler makers.....	7	.....	2 25	10	37	.....	2 35	10	.....	.....	.....	.....
Blacksmiths.....	35	.....	1 75	10	3	.....	4 00	10	32	.....	1 82	10
Blacksmiths.....	7	.....	2 50	10	2	.....	4 50	10	2	.....	2 25	10
Blacksmiths.....	5	.....	2 00	10	1	.....	1 75	12	23	.....	2 35	10
Bricklayers.....	20	.....	3 00	10	20	.....	3 50	10	.....	.....	.....	.....
Carpenters.....	14	.....	2 12	10	24	.....	1 85	10	16	.....	2 25	10
Carpenters.....	46	.....	1 75	10	2	.....	1 65	10	.....	.....	.....	.....
Car repairers.....	15	.....	1 95	10	20	.....	1 65	10	6	.....	1 35	10
Core makers.....	1	.....	2 00	10	2	.....	1 25	10	.....	.....	.....	.....
Cigar makers.....	5	.....	2 25	10	4	.....	1 75	10	5	.....	2 00	10
Cigar makers.....	4	.....	1 25	10	4	.....	1 50	10	.....	.....	.....	.....
Cornice men.....	3	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Cooper.....	1	.....	2 20	10	.....	.....	.....	.....	.....	.....	.....	.....
Compositors.....	27	.....	1 50	10	4	.....	1 65	10	.....	.....	.....	.....
Curriers.....	4	.....	1 67	10	7	.....	50	10	.....	.....	.....	.....
Corkers.....	6	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Car erectors.....	52	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Coppersmith.....	1	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Cabinet makers.....	6	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Clerks in stores.....	200	.....	1 35	10	.....	35	66	10	.....	.....	.....	.....
Collector.....	1	.....	1 66	10	1	.....	1 50	10	.....	.....	.....	.....
Diggers.....	20	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Drillers.....	4	.....	1 35	10	14	.....	3 50	10	30	.....	4 00	10
Dressmakers.....	.....	125	70	10	.....	.....	.....	.....	.....	.....	.....	.....
Engineer.....	1	.....	2 25	10	25	.....	3 00	10	1	.....	1 67	10
Engineer.....	1	.....	70	10	4	.....	1 50	10	4	.....	2 00	10
Engineer.....	1	.....	1 75	10	33	.....	3 25	12	2	.....	1 75	12
Editor.....	1	.....	3 33	10	4	.....	1 50	10	1	.....	3 50	12
Equalizer.....	1	.....	75	10	.....	.....	.....	.....	.....	.....	.....	.....
Fireman.....	1	.....	2 00	10	25	.....	1 50	12	50	.....	1 70	10
Firemen.....	10	.....	1 50	10	2	.....	1 29	10	.....	.....	.....	.....
Finishers.....	34	.....	1 50	12	1	.....	2 00	10	5	.....	2 25	10
Foremen.....	7	.....	1 75	12	16	.....	3 00	10	2	.....	3 33	10
Foremen.....	3	.....	2 32	12	1	.....	2 36	12	1	.....	4 00	12
Grader.....	1	.....	1 33	12	.....	.....	.....	.....	.....	.....	.....	.....
Hubb turners.....	2	.....	2 00	12	.....	.....	.....	.....	.....	.....	.....	.....
Helpers.....	11	.....	1 50	10	10	.....	75	12	15	.....	70	10
Helpers.....	9	.....	2 00	10	14	.....	50	12	3	.....	1 25	10
Helpers.....	15	.....	1 00	10	7	.....	1 15	12	9	.....	1 35	10
Hod carriers.....	26	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Hostler.....	1	.....	1 60	10	.....	.....	.....	.....	.....	.....	.....	.....
Inspector.....	1	.....	2 50	10	1	.....	1 50	10	1	.....	1 40	10
Ironers.....	.....	3	1 16	10	.....	5	75	10	6	.....	70	10
Laborers.....	2	.....	1 12	10	49	.....	1 30	10	4	.....	1 80	10
Laborers.....	1	.....	50	10	40	.....	1 00	10	88	.....	1 25	10
Laborers.....	25	.....	1 75	10	37	.....	1 50	10	27	.....	1 25	10
Laborers.....	28	.....	1 35	10	40	.....	1 50	12	7	.....	1 60	10
Machine hands.....	51	.....	1 85	10	6	.....	2 00	10	6	.....	1 50	10
Machine hands.....	3	.....	2 25	10	.....	18	55	10	.....	.....	.....	.....
Moulders.....	9	.....	2 00	10	6	.....	2 25	10	47	.....	2 15	10
Moulders.....	1	.....	2 50	10	1	.....	1 00	10	22	.....	2 45	10
Machinist.....	1	.....	2 75	10	10	.....	2 25	10	3	.....	1 25	10
Machinists.....	5	.....	2 10	10	1	.....	3 33	10	1	.....	3 00	10
Machinists.....	12	.....	2 00	10	20	.....	2 43	10	56	.....	2 35	10
Miller.....	1	.....	3 46	10	2	.....	2 00	10	.....	.....	.....	.....
Office help.....	1	.....	1 00	10	3	.....	1 30	10	2	.....	3 25	10

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Lima—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Office help.....	5	.....	\$2 05	10	2	.....	\$3 00	10	7	.....	\$2 35	10
Office help.....		1	50	10								
Off-bearers.....	4	.....	85	10								
Painters	25	.....	1 75	10	2	.....	1 50	10	2	.....	3 35	10
Painters	2	.....	2 25	10	5	.....	2 00	10	10	.....	1 60	10
Painters	1	.....	2 20	10								
Plasterers	18	.....	2 25	10								
Pattern makers	2	.....	2 50	10								
Paper makers.....	4	.....	1 75	10								
Pressmen	2	.....	1 50	10	1	.....	2 00	10				
Pumpers.....	34	.....	1 66	10								
Piece workers.....	4	.....	2 50	10								
Plumbers	4	.....	3 50	10								
Packers	5	.....	1 50	10								
Poultry pickers.....	8	.....	1 50	10								
Reporter.....	1	.....	2 00	10								
Riveters	22	.....	2 25	10								
Stone masons	16	.....	2 25	10								
Superintendent.....	1	.....	3 34	10	3	.....	2 50	10	1	.....	3 00	10
Superintendent	1	.....	4 00	10								
Stockmen	10	.....	1 33	10								
Secretary	1	.....	2 50	10								
Sawyers	1	.....	1 65	10	1	.....	1 75	10	2	.....	2 50	10
Solders	3	.....	1 60	10								
Slater	1	.....	2 25	10								
Stripper.....	1	.....	50	10								
Starchers.....		2	75	10								
Steam fitters	2	.....	2 00	10								
Streetmen	5	.....	1 50	10								
Stokers.....	6	.....	1 67	10								
Tool dressers	20	.....	3 00	10								
Tanners.....	2	.....	1 50	10								
Tank builders	5	.....	2 50	10								
Turners.....	5	.....	2 25	10	1	.....	1 65	10	1	.....	2 00	10
Trimmers.....	1	.....	2 50	10	2	.....	2 00	10				
Tinners.....	2	.....	1 75	10								
Teamsters	10	.....	1 35	10	10	.....	1 33	10	10	.....	1 20	10
Teamsters	3	.....	1 25	10	4	.....	2 50	10				
Truck builders	5	.....	1 80	10								
Tailors.....	100	.....	2 25	10		40	85	10				
Upholsterers	1	.....	2 30	10								
Wipers.....	9	.....	1 15	.....							
Woodworkers	2	.....	2 00	10	12	.....	2 15	10				
Wheelmen.....	12	.....	2 00	10								
Watchman	1	.....	1 35	10								
Yardmen	1	.....	1 00	10	4	.....	1 75	10				

Total number of men employed, 2,267. Total number of women employed, 237.

LIMA.

Lima is one of the best organized towns in the State, the Knights of Labor alone having 500 members. The many industries of the city here run steadily, the wages being in excess of most north-western Ohio towns. The statistics were obtained by an agent sent out from this office. A number of the manufacturers refused to give the value of their annual product and capital invested. These are estimated. The Standard Oil Company absolutely refused to give any information whatever. They employ a large number of men in all parts of the country, which is literally dotted with its oil tanks and derricks. Many private individuals own their own wells, disposing of their product to the Standard or the company competing with it for the trade of the district. The producers undertook, in the last session of the 67th General Assembly, to secure legislation that would protect them from the grasping, avaricious power of the Standard. The measure was defeated in the House after passing the Senate. As it is, the producers are at the mercy of the Standard. At the time the Agent of this Bureau was in the county they were forced to sell their oil at 15 cents a barrel. The above statistics of Lima are exclusive of the Standard refinery.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Ashland, Ashland County.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	women.			Men.	Women.			Men.	Women.		
Apprentices	2		\$ 60	10	1		\$ 67	10				
Bricklayers	4		3 50	10								
Blacksmiths	6		1 50	10	4		1 75	10	1		\$2 00	10
Bed-adjusters	3		1 50	10								
Book-keepers	1		1 50	10	2		2 00	10	1		1 75	10
Coopers	3		1 35	10								
Cigar makers	4		2 00	10								
Carpenters	5		2 00	10	5		1 50	10	2		1 75	10
Clerks in stores	40		1 35	10		3	1 10	10				
Compositors	4		1 56	10		5	50	10	2		2 00	10
Compositors	4		1 25	10								
Dressmakers		8	60	10								
Engineers	1		2 00	10	1		1 25	10	3		1 50	10
Foremen	1		1 60	10	2		2 00	10				
Helpers	3		1 50	10	9		1 25	10	9		1 00	10
Helpers	1		1 35	10								
Hod carriers	6		1 50	10								
Laborers	2		1 25	10	2		1 00	10	3		1 50	10
Machinemen	3		1 90	10								
Millers	2		1 60	10	2		1 40	10				
Moulders	18		1 50	10	3		2 00	10				
Machinists	20		1 75	10								
Managers	1		3 34	10	1		2 00	10	1		1 67	10
Officemen	5		1 50	10								
Off-bearer	1		1 50	10								
Planers	1		1 75	10	1		1 70	10				
Packer	1		1 40	10								
Painters	6		1 25	10	13		1 75	10	2		2 10	10
Plasterers	6		2 25	10								
Stonemasons	3		2 50	10								
Setter	1		1 50	10								
Sawyers	2		2 00	10								
Scrollman	1		2 00	10								
Shipping clerk	1		2 50	10								
Stripper	1		34	10								
Spring turners	2		1 40	10								
Salesmen	4		3 00	10	1		1 75	10				
Teamster	1		1 50	10								
Type writer	1		2 00	10								
Tinners	1		1 75	10	1		2 00	10				
Tailors	7		2 00	10								
Woodworkers	11		1 75	10	2		1 80	10				
Weavers	3		1 75	10								

Total number of men employed, 267. Total number of women employed, 16.

Ashtabula, Ashtabula County.

Apprentices	3		1 00	10	1		66	10	3		75	10
Apprentices	2		1 15	10								
Blacksmiths	18		1 50	10	2		2 50	10				
Boys	1		1 00	10	6		60	10				
Book-keepers	1		1 00	10	1		1 50	10	1		3 00	10
Bricklayers	12		3 00	10								
Bit makers	5		1 50	10								
Compositors		2	1 10	10		2	*	10				
Cutters	3		2 00	10								
Carpenters	4		2 00	10	90		1 75	10				
Firemen	3		1 25	10	5		1 50	10	2		1 75	10
Foremen	1		1 50	10	2		2 50	10				
Finishers	5		1 25	10								
Grinder	1		1 87	10								
Hod carriers	50		1 25	10								

* 20 cents per 1,000 ems.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.
Ashtabula—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Helpers	2	.....	\$1 50	10	1	.....	\$0 75	10	.....	.....	.....	.....
Iron workers.....	37	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Journeyman.....	2	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Laborers.....	10	.....	1 00	10	11	.....	1 50	10	103	.....	\$1 25	10
Millers.....	2	.....	1 83	10	.....	.....	.....	.....	.....	.....	.....	.....
Moulders	5	.....	1 75	10	1	.....	4 00	10	.....	.....	.....	.....
Machinists.....	4	.....	2 50	10	5	.....	1 75	10	32	.....	2 00	10
Machinists.....	3	.....	2 25	10	2	.....	1 50	10	.....	.....	.....	.....
Operators .....	.....	80	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Painters	2	.....	1 25	10	37	.....	2 00	10	.....	.....	.....	.....
Pattern maker.....	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Plasterers	20	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Shipping clerk.....	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Superintendent.....	1	.....	4 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Spreader.....	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Stone masons	25	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Teamsters	1	.....	1 50	10	1	.....	1 20	10	1	.....	40	10
Tinner.....	1	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Tanners	4	.....	2 50	10	10	.....	2 00	10	.....	.....	.....	.....
Woodworkers	6	.....	1 75	10	4	.....	1 50	10	2	.....	2 25	10
Woodworkers.....	44	.....	1 35	10	.....	.....	.....	.....	.....	.....	.....	.....
Watchmen.....	2	.....	1 25	10	2	.....	1 50	10	1	.....	1 40	10

Total number of men employed, 609. Total number of women employed, 84.

Geneva.

Boy	1	.....	50	10	.....	.....	.....	.....	.....	.....	.....	.....
Brush makers.....	.....	2	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Blacksmiths	8	.....	2 00	10	1	.....	1 60	10	.....	.....	.....	.....
Belters.....	4	.....	1 10	10	.....	.....	.....	.....	.....	.....	.....	.....
Bricklayers	9	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Bookkeepers.....	1	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Clerks in stores.....	33	.....	1 75	13	.....	8	1 60	10	.....	.....	.....	.....
Carpenters.....	20	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Cigar-makers	2	.....	*1	10	.....	.....	.....	.....	.....	.....	.....	.....
Compositors	1	.....	4 00	10	1	.....	2 17	10	5	.....	1 79	10
Compositors .....	.....	3	*2	10	.....	.....	.....	.....	.....	.....	.....	.....
Dressmakers .....	.....	15	75	10	.....	.....	.....	.....	.....	.....	.....	.....
Editors.....	1	.....	3 50	10	1	.....	4 00	10	.....	.....	.....	.....
Engineers.....	1	.....	1 65	10	2	.....	1 50	10	1	.....	2 50	10
Foremen.....	3	.....	1 50	10	2	.....	3 00	10	2	.....	2 00	10
Foremen.....	6	.....	2 70	10	.....	.....	.....	.....	.....	.....	.....	.....
Finishers	2	.....	1 25	10	8	.....	1 15	10	.....	.....	.....	.....
Fork setter	1	.....	1 35	10	.....	.....	.....	.....	.....	.....	.....	.....
Grinder.....	1	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Handle bender	1	.....	1 10	10	.....	.....	.....	.....	.....	.....	.....	.....
Hod carriers.....	7	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Helper.....	1	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Iron workers.....	7	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Laborers.....	15	.....	1 15	10	3	.....	1 50	10	14	.....	1 00	10
Laborers.....	1	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Machinists.....	1	.....	2 00	10	1	.....	1 67	10	1	.....	2 50	10
Moulders	1	.....	2 00	10	1	.....	1 00	10	.....	.....	.....	.....
Plumbers	2	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Polishers.....	5	.....	1 50	10	3	.....	1 25	10	.....	.....	.....	.....
Pressmen	3	.....	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Plasterers	6	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Painters .....	.....	1	60	10	8	.....	2 00	10	.....	.....	.....	.....
Riveter.....	1	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Secretaries.....	2	.....	2 00	10	1	.....	6 00	10	1	.....	4 00	10
Secretaries.....	1	.....	3 80	10	.....	.....	.....	.....	.....	.....	.....	.....
Superintendents.....	1	.....	3 00	10	1	.....	6 00	10	1	.....	4 00	10
Shaker man.....	1	.....	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Sawyers	1	.....	1 35	10	1	.....	1 50	10	1	.....	1 00	10

*1 \$9.00 per thousand. *2 20 cents per thousand ems.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Athens—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Painters	12	.....	\$2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Pattern makers.....	2	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Plasterers.....	9	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Plumbers	2	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Stone masons.....	7	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Strippers	2	.....	25	10	2	.....	\$ 34	10	.....	.....	.....	.....
Teamsters.....	1	.....	1 40	10	1	.....	1 25	10	.....	.....	.....	.....
Trimmers.....	1	.....	2 00	10	1	.....	1 00	10	.....	.....	.....	.....
Tailors.....	10	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Wheelers	2	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Woodworkers	2	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 257. Total number of women employed, 9.

Minster, Auglaize County.

Brewers.....	8	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Body maker	1	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Bricklayers	2	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Blacksmiths	2	.....	1 50	10	4	.....	1 75	10	.....	.....	.....	.....
Clerks	7	.....	1 25	11	.....	.....	.....	.....	.....	.....	.....	.....
Carpenters.....	5	.....	1 25	10	5	.....	1 50	10	2	.....	1 75	10
Carpenters.....	2	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Coopers.....	41	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Dressmakers.....	.....	11	75	12	.....	.....	.....	.....	.....	.....	.....	.....
Engineer	1	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Laborers.....	14	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Millers.....	4	.....	1 50	8	.....	.....	.....	.....	.....	.....	.....	.....
Plasterers.....	2	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Stone masons.....	2	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Shoemakers	10	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Sawyers.....	7	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Tailors.....	5	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Trimmer.....	1	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Woodworkers.....	4	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Wool millers	7	.....	1 25	10	.....	8	75	10	.....	.....	.....	.....

Total number of men employed, 136. Total number of women employed, 19.

New Bremen.

Blacksmiths	2	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Carpenters.....	3	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Cabinet makers	7	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Compositors	5	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Dairy hands	8	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Engineers.....	1	.....	2 00	10	2	.....	1 50	10	.....	.....	.....	.....
Laborers.....	4	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Moulders	8	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Machinists.....	6	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Machine hands.....	3	.....	1 50	10	6	.....	1 25	10	.....	.....	.....	.....
Millers.....	3	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Pattern maker.....	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Painters	5	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Sawyers.....	4	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Spinners.....	6	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Teamsters.....	3	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Tile makers.....	4	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Weavers	5	.....	1 50	10	.....	6	90	10	.....	.....	.....	.....
Woodworkers.....	4	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 90. Total number of women employed, 6.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Wapakoneta.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.	Wages per day.	Hours of labor daily.	No. em- ployed.	Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.		Men.	Women.	
Apprentices	1	.....	\$ 50	10	2	.....	\$ 75	.....	.....	.....
Book-keepers.....	1	.....	2 00	12	3	.....	1 42	1	.....	\$2 00 10
Book-keepers.....	1	.....	1 67	10	1	.....	2 50	.....	.....	.....
Brewers	6	.....	1 25	12	.....	.....	.....	.....	.....	.....
Bricklayers	2	.....	1 75	10	3	.....	2 00	.....	.....	.....
Bodymaker.....	1	.....	2 00	10	.....	.....	.....	.....	.....	.....
Benders.....	10	.....	1 25	10	1	.....	1 50	.....	.....	.....
Belters.....	2	.....	1 25	10	.....	.....	.....	.....	.....	.....
Bottlers	3	.....	1 50	10	1	.....	1 67	.....	.....	.....
Blacksmiths	2	.....	1 50	10	20	.....	1 75	3	.....	2 00 10
Blacksmiths	1	.....	1 65	10	.....	.....	.....	.....	.....	.....
Cigarmakers.....	2	.....	1 50	10	3	.....	2 00	.....	.....	.....
Cabinetmakers	4	.....	1 55	10	.....	.....	.....	.....	.....	.....
Churn men	2	.....	1 50	10	.....	.....	.....	.....	.....	.....
Clerks in stores	14	.....	1 27	10	22	.....	1 52	42	.....	1 70 10
Clerks in stores .....	.....	4	92	10	.....	11	50	.....	.....	.....
Chucker	1	.....	1 50	10	.....	.....	.....	.....	.....	.....
Carpenters.....	19	.....	1 75	10	4	.....	2 00	.....	.....	.....
Dressmakers .....	.....	14	70	10	.....	.....	.....	.....	.....	.....
Driver	1	.....	1 17	10	.....	.....	.....	.....	.....	.....
Engineers.....	1	.....	1 88	15	5	.....	1 50	1	.....	1 75 10
Engineers.....	1	.....	1 25	20	.....	.....	.....	.....	.....	.....
Equalizer	1	.....	1 10	10	.....	.....	.....	.....	.....	.....
Foremen.....	1	.....	1 50	10	1	.....	2 25	2	.....	2 70 10
Finishers	6	.....	2 00	10	2	.....	1 65	.....	.....	.....
Helpers	2	.....	1 17	10	2	.....	34	1	.....	50 10
Handle topper.....	1	.....	1 10	10	.....	.....	.....	.....	.....	.....
Hod carriers.....	3	.....	1 35	10	.....	.....	.....	.....	.....	.....
Inspector	1	.....	1 67	10	.....	.....	.....	.....	.....	.....
Laborers.....	27	.....	1 24	10	3	.....	1 25	2	.....	1 40 12
Laborers.....	4	.....	1 25	10	15	.....	1 10	3	.....	1 00 10
Laborers.....	3	.....	1 25	20	1	.....	75	.....	.....	.....
Managers	2	.....	2 50	12	1	.....	2 50	2	.....	4 00 10
Millers.....	1	.....	2 16	15	2	.....	2 00	.....	.....	.....
Machinememen	2	.....	1 75	10	18	.....	1 40	10	.....	1 33 10
Off-bearers.....	2	.....	1 25	12	1	.....	1 00	.....	.....	.....
Printers.....	4	.....	85	10	3	.....	1 25	.....	.....	.....
Plasterers.....	1	.....	1 50	10	3	.....	1 75	.....	.....	.....
Packer.....	1	.....	1 00	10	.....	.....	.....	.....	.....	.....
Painters	2	.....	50	10	3	.....	2 00	.....	.....	.....
Reaper.....	1	.....	1 50	10	.....	.....	.....	.....	.....	.....
Stripper	1	.....	50	10	.....	.....	.....	.....	.....	.....
Sawyers.....	2	.....	2 00	12	5	.....	1 40	3	.....	1 25 12
Sawyers.....	4	.....	1 35	12	.....	.....	.....	.....	.....	.....
Setters	2	.....	1 25	12	.....	.....	.....	.....	.....	.....
Spoke driver.....	1	.....	2 20	10	.....	.....	.....	.....	.....	.....
Stone masons.....	2	.....	1 75	10	.....	.....	.....	.....	.....	.....
Salesmen	1	.....	1 34	10	1	.....	4 16	.....	.....	.....
Spoke finishers	19	.....	1 75	10	7	.....	1 50	.....	.....	.....
Tailors.....	30	.....	2 50	10	.....	20	1 00	.....	.....	.....
Trimmers	1	.....	3 50	10	1	.....	2 00	.....	.....	.....
Turners.....	4	.....	1 60	10	1	.....	1 50	1	.....	1 80 10
Wheel finishers.....	5	.....	1 50	10	.....	.....	.....	.....	.....	.....
Woodworker.....	1	.....	1 60	10	.....	.....	.....	.....	.....	.....

Total number of men employed, 418. Total number of women employed, 49.

Barnesville, Belmont County.

Bricklayers	2	.....	3 50	10	.....	.....	.....	.....	.....	.....
Blacksmiths	14	.....	2 00	10	.....	.....	.....	.....	.....	.....
Blowers.....	19	.....	6 00	10	.....	.....	.....	.....	.....	.....
Cutters	7	.....	5 00	10	.....	.....	.....	.....	.....	.....
Carpenters.....	16	.....	1 65	10	.....	.....	.....	.....	.....	.....
Clerks in stores.....	36	.....	1 00	10	.....	5	85	10	.....	.....
Dressmakers.....	.....	34	75	10	.....	.....	.....	.....	.....	.....
Engineers.....	8	.....	1 50	10	.....	.....	.....	.....	.....	.....

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Bellaire—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Heaters	8		\$5 00	12								
Hand workers	25		1 50	10	15		\$ 95	10				
Iron workers.....	10		2 75	10								
Keepers.....	2		2 50	12								
Liersmen	2		1 50	10								
Laborers	79		1 50	10	61		1 60	10	58		\$1 75	10
Laborers.....	118		1 00	10		18	65	10				
Laborers.....	13		1 25	10								
Leer tenders.....	7		1 75	10	2		2 00	9				
Layers out.....	2		2 35	9	3		1 66	8				
Managers	1		3 25	10	1		2 00	10	1		4 75	10
Managers	1		3 00	10								
Mixers	3		1 50	10	1		2 00	8				
Machine men.....	4		2 25	10								
Moulders	4		2 25	10	28		3 50	10				
Millers.....	1		2 50	10	2		3 33	10				
Millers.....	1		1 66	10								
Mounters.....	7		2 25	10								
Mould makers.....	7		4 33	10	6		4 00	10	10		3 25	10
Mould makers.....	8		2 75	10								
Mechanics.....	2		3 25	10	8		2 25	10	20		2 50	12
Nailers.....	35		5 30	10								
Nail feeders.....	125		1 50	10								
Officers	3		7 00	9	2		8 00	8	4		5 00	8
Office clerks.....	5		3 00	12	7		2 00	10	3		4 00	10
Office clerks.....	3		3 33	10	3		2 15	10	4		1 65	10
Office clerks.....	5		1 33	10								
Packers	2		4 00	10	10		1 50	10	4		1 75	9
Packers	1		3 00	8	1		2 00	15				
Printers.....	2	9	1 50	10	2		1 25	10				
Press hands.....	60		1 00	10								
Pressers.....	12		4 40	10	12		3 84	10	10		3 75	10
Pressers.....	6		4 00	10	4		3 50	10				
Pot makers	7		3 50	10	2		4 50	9	1		4 00	8
Pot makers	1		2 75	10								
Rollers.....	4		5 00	10	6		1 50	10	1		1 33	10
Rollers.....	4		66	10								
Superintendents.....	1		8 33	10	1		5 00	10	1		5 66	10
Steel workers	180		2 42	10								
Shell pickers.....	5		1 50	10								
Salesmen	2		4 00	10	1		3 00	10	3		3 33	10
Salesmen	3		1 65	10								
Secretary	1		4 25	10								
Shipper	1		2 50	10								
Snappers.....	28		1 00	10								
Teamsters.....	12		1 50	10	7		1 75	10				
Teazers	14		2 00	10								
Weighmasters	2		2 00	12								
Warehouse men	2		1 75	10								
Wheel tender.....	1		1 25	10								
Women		13	50	10		16	50	10		15	66	10

Total number of men employed, 1,759. Total number of women employed, 92.

Bridgeport.

Blacksmiths	3		2 00	10	3		1 95	10½				
Bricklayers	16		4 00	10								
Bar mill shearmen	4		*1	12								
Buggy men	3		2 25	12								
Bundlers.....	3		2 00	12								
Cart drivers.....	6		1 25	10½								
Cinder wheelers	4		1 25	10								
Coopers	8		1 60	9	1		1 25	9				
Catchers	4		3 00	10	1		3 25	10	1		3 50	10

*1 18 cents per gross ton.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Bridgeport—Continued.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Catchers	2		\$2 25	10	4		\$2 75	10				
Can blowers	11		3 20	10								
Can gatherers	15		2 20	10								
Casers	16		3 00	10								
Carpenters	3		2 06	10								
Catchers' helpers	3		1 80	12	1		1 75	12				
Drivers	3		1 50	10	1		1 75	10				
Doublers	1		1 85	10	4		1 50	10				
Edgers	5		2 00	10								
Engravers	3		3 00	10								
Engineers	3		2 00	10	1		1 75	10				
Firemen	8		1 40	12								
Faggoters	4		*1	12								
Finishers	8		4 70	10	3		1 50	10				
Gas-furnacemen	3		1 50	10								
Glass cutters	14		2 50	10								
Heaters	4		4 50	12	2		6 00	12	3		\$7 00	12
Heaters	2		5 50	12	4		5 00	12	2		4 75	12
Heaters' helpers	6		2 50	12	4		2 00	12				
Helpers	9		1 25	12	3		2 00	12	2		1 33	12
Helpers	1		2 35	12	1		1 40	12	3		1 15	12
Helpers	4		1 35	10 ¹ / ₂	8		1 75	10				
Hookups	2		1 50	12 ¹ / ₂	1		1 40	12	1		1 90	12
Head-gatherer	1		3 00	10								
Handlers	16		5 00	10	13		4 40	10				
Head-pressers	6		5 00	10								
Head-finishers	8		3 50	10								
Jug blowers	9		4 00	10								
Jug gatherers!	11		2 40	10								
Laborers	14		1 00	12	40		1 25	10	165		1 25	9
Laborers	93		1 15	10	3		1 00	10	1		1 66	10
Laborers	1		1 75	10								
Leermen	4		2 00	10								
Leermen's helpers	6		1 25	10								
Millers	3		2 00	10	1		1 70	10				
Mould makers	26		3 00	10	20		2 75	10				
Mark-boys	3		1 50	12								
Matchers	3		1 80	12	1		1 50	12	1		1 85	12
Matchers	1		1 60	12	1		1 65	12	4		2 40	12
Matchers	4		2 50	12								
Matchers' helpers	2		1 30	12								
Muck carriers and weighers	10		1 95	10 ¹ / ₂								
Metal wheelers	2		*2	10								
Mixers	10		1 75	10 ¹ / ₂								
Muck shearmen	4		*3	12								
Night roller	1		4 50	12								
Ore brushers	8		1 30	10 ¹ / ₂								
Packers	3		2 38	10	1		1 66	10	2		1 75	10
Packers	16		1 50	10		15	1 00	10				
Pilers	4		1 25	10								
Pullouts	2		1 25	12	1		1 75	12				
Puddlers	66		3 60	12								
Puddlers' helpers	66		1 80	12								
Pair heaters	5		2 25	12	2		1 85	12	2		2 75	12
Press gatherers	21		2 20	10								
Pressers	11		3 90	10								
Rollers	3		9 50	12	1		6 50	12	1		10 00	12
Rollers	1		9 00	12	1		5 50	12	2		7 50	12
Rollers	2		6 00	12	2		8 00	12	1		4 50	12
Rollers' helpers	3		2 50	12	1		2 00	12				
Roughers	4		3 00	12	7		3 50	12	1		2 50	12
Roughers	3		2 25	12	1		2 75	12				
Shearers	9		3 20	10	10		1 05	10				
Sash and blind makers	34		2 15	10								
Stone masons	9		3 50	10								
Stranders	4		1 35	12								

*1 3¹/₂ cents per piece. *2 13¹/₂ cents per gross ton. *3 13 cents per ton.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Bridgeport—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Scrapers.....	4	.....	\$1 65	12	.....	.....	.....	.....	.....	.....	.....	.....
Straighteners.....	2	.....	1 90	10	.....	.....	.....	.....	.....	.....	.....	.....
Spell hands.....	68	.....	1 75	12	.....	.....	.....	.....	.....	.....	.....	.....
Scale wheelers.....	4	.....	1 25	10½	.....	.....	.....	.....	.....	.....	.....	.....
Selecters.....	2	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Shearmen.....	3	.....	5 00	12	1	.....	\$2 00	12	1	.....	\$3 00	12
Shearmen.....	4	.....	1 25	12	1	.....	1 40	12	2	.....	6 00	12
Shearmen.....	1	.....	3 50	12	1	.....	4 50	12	3	.....	1 50	12
Sheet barmen.....	2	.....	*1	12	.....	.....	.....	.....	.....	.....	.....	.....
Tumbler blowers.....	16	.....	3 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Tumbler gatherers	21	.....	2 20	10	.....	.....	.....	.....	.....	.....	.....	.....
Teamsters	5	.....	1 25	10	2	.....	1 15	10	.....	.....	.....	.....
Warehousemen	10	.....	1 15	10½	.....	.....	.....	.....	.....	.....	.....	.....
Watchmen.....	6	.....	1 68	11	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 1,192. Total number of women employed, 15.

*1 34 cents per ton.

Martin's Ferry.

Apprentices	63	.....	75	10	2	.....	65	10	.....	.....	.....	.....
Book-keepers	1	.....	1 67	10	1	.....	2 50	15	.....	.....	.....	.....
Blacksmiths	2	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Box makers.....	2	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Boy scrathers.....	1	.....	80	10	.....	.....	.....	.....	.....	.....	.....	.....
Blowers.....	10	.....	3 20	10	17	.....	4 00	10	.....	.....	.....	.....
Carpenters.....	15	.....	2 00	10	4	.....	2 25	10	.....	.....	.....	.....
Coopers.....	50	.....	1 65	10	.....	.....	.....	.....	.....	.....	.....	.....
Coke fillers	4	.....	1 65	10	.....	.....	.....	.....	.....	.....	.....	.....
Cagers	2	.....	1 65	10	.....	.....	.....	.....	.....	.....	.....	.....
Cutters.....	5	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Engraver	1	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Engineers	2	.....	2 40	10	1	.....	1 00	10	1	.....	1 67	10
Engineers.....	1	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Finishers	8	.....	3 20	10	.....	.....	.....	.....	.....	.....	.....	.....
Foreman	1	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Feeders	150	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Forger	1	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Factory boys	160	.....	90	10	.....	.....	.....	.....	.....	.....	.....	.....
Girls .....	.....	50	60	10	.....	.....	.....	.....	.....	.....	.....	.....
Gatherers.....	29	.....	2 20	10	.....	.....	.....	.....	.....	.....	.....	.....
Heaters	6	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Helpers	1	.....	1 50	10	4	.....	1 65	10	1	.....	1 60	10
Helpers	12	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Keepers	2	.....	2 30	10	.....	.....	.....	.....	.....	.....	.....	.....
Laborers.....	17	.....	1 50	10	13	.....	1 75	10	6	.....	1 37	10
Laborers.....	20	.....	1 35	10	35	.....	1 25	10	129	.....	2 00	10
Metalmen.....	4	.....	1 65	10	.....	.....	.....	.....	.....	.....	.....	.....
Moulders	10	.....	2 75	10	10	.....	2 50	10	.....	.....	.....	.....
Machine hands	13	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Mixers.....	3	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Mouldmakers.....	7	.....	3 25	10	8	.....	3 50	10	.....	.....	.....	.....
Machinists.....	17	.....	1 80	10	6	.....	3 50	10	.....	.....	.....	.....
Nailers	58	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Ore fillers.....	4	.....	1 65	10	.....	.....	.....	.....	.....	.....	.....	.....
Painters	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Pressers.....	10	.....	3 80	10	17	.....	4 00	10	.....	.....	.....	.....
Pattern makers.....	1	.....	2 00	10	2	.....	3 00	10	.....	.....	.....	.....
Pattern filer	1	.....	1 80	10	.....	.....	.....	.....	.....	.....	.....	.....
Packers	10	.....	1 50	10	4	.....	1 75	10	.....	.....	.....	.....
Rollers.....	2	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Roll hands.....	10	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Shearers	15	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Stove fitters	4	.....	1 80	10	.....	.....	.....	.....	.....	.....	.....	.....
Tenders.....	18	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Teamsters.....	1	.....	1 25	10	1	.....	1 50	10	.....	.....	.....	.....
Top fillers.....	3	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 1,020. Total number of women employed, 50.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Somerton, Belmont County.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Blacksmiths.....	2	.....	\$1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Cigarmakers.....	3	.....	40	10	.....	.....	.....	.....	.....	.....	.....	.....
Carpenters.....	6	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Clerks in stores.....	6	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Dressmakers..	.....	4	50	10	.....	.....	.....	.....	.....	.....	.....	.....
Stone masons.....	2	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Street laborers.....	21	44	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Superintendents.....	2	.....	5 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Tinner.....	1	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Wagon maker	1	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Warehouse hands.....	6	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 50. Total number of women employed, 48.

Ripley, Brown County.

Blacksmiths.....	2	.....	1 50	10	14	.....	2 00	10	1	.....	1 25	10
Bricklayers	3	.....	3 50	10	.....	12	*2	9	.....	.....	.....	.....
Cigarmakers.....	20	.....	*1	9	.....	.....	.....	.....	.....	.....	.....	.....
Carpenters.....	10	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Clerks in stores.....	10	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Common laborers	16	.....	1 25	10	24	.....	1 00	10	.....	.....	.....	.....
Core makers	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Dressmakers..	.....	8	75	10	.....	.....	.....	.....	.....	.....	.....	.....
Foremen.....	4	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Hod carriers.....	4	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Helper.....	1	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Manager	1	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Mechanics.....	1	.....	1 75	10	4	.....	2 00	10	.....	.....	.....	.....
Plumbers	2	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Plasterers	10	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Painters	1	.....	1 50	10	9	.....	2 00	10	.....	.....	.....	.....
Superintendent.....	1	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Stone masons.....	4	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Skilled laborers.....	25	.....	2 00	10	25	.....	1 75	10	10	.....	1 50	10
Tinners	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Tailors.....	5	4	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Tanners.....	8	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Varnishers.....	1	.....	2 00	10	1	.....	2 25	10	.....	.....	.....	.....
Woodworkers.....	1	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 220. Total number of women employed, 24.

*1 60 cents per ton. *2 40 cents per ton.

Middletown, Butler County.

Apprentices	8	.....	75	10	4	.....	60	10	4	.....	1 33	10
Bricklayers	14	.....	2 50	10	.....	1	75	10	1	1	2 00	10
Book-keepers.....	.....	1	50	10	.....	.....	.....	.....	.....	.....	.....	.....
Back tenders	8	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Box makers	8	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Brewers.....	4	.....	2 34	10	.....	.....	.....	.....	.....	.....	.....	.....
Blacksmiths	12	.....	2 00	10	1	.....	1 50	10	2	.....	75	10
Blacksmiths.....	38	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Compositors.....	4	.....	2 00	10	3	.....	1 75	10	.....	.....	.....	.....
Coopers	3	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Carpenters.....	20	.....	2 00	10	7	.....	1 75	10	3	.....	2 50	10
Cigarmakers.....	7	.....	1 50	10	16	.....	1 33	10	.....	.....	.....	.....
Clerks	7	.....	4 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Drivers	5	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Engineers.....	2	.....	3 00	10	2	.....	1 50	10	1	.....	1 75	10
Engineers.....	1	.....	1 66	10	1	.....	2 50	10	.....	.....	.....	.....
Editors	1	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Finishers	4	.....	1 55	10	.....	20	1 00	10	8	.....	2 00	10

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Middletown—Concluded.

Occupation.	No. employed.		Wages per day.	Hours of labor daily.	No. employed.		Wages per day.	Hours of labor daily.	No. employed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Foremen.....	1	.....	\$2 00	10	5	.....	\$3 00	10	.....	.....	.....	.....
Firemen.....	2	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Hod carriers.....	10	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Helpers.....	3	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Laborers.....	115	.....	1 25	10	.....	206	1 00	10	83	.....	\$1 50	10
Laborers.....	46	.....	1 33	10	9	.....	1 68	10	.....	.....	.....	.....
Machine hands.....	8	.....	2 25	10	9	.....	2 50	10	13	.....	2 50	10
Moulders.....	3	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Millers.....	2	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Machinists.....	4	.....	1 38	10	7	.....	2 25	10	4	.....	3 00	10
Managers.....	1	.....	4 00	10	3	.....	2 50	10	1	.....	2 00	10
Office help.....	2	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Paper layers.....	1	25	75	10	.....	.....	.....	.....	.....	.....	.....	.....
Pressman.....	1	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Press feeders.....	.....	7	75	10	.....	.....	.....	.....	.....	.....	.....	.....
Painters.....	1	.....	2 50	10	8	.....	2 00	10	.....	.....	.....	.....
Plasterers.....	10	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Stone masons.....	7	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Stereotypers.....	1	.....	1 66	10	.....	.....	.....	.....	.....	.....	.....	.....
Trimmers.....	2	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 563. Total number of women, 261.

Hamilton.

Apprentices.....	6	.....	1 25	10	6	.....	50	10	14	.....	76	10
Apprentices.....	17	.....	75	10	68	.....	1 00	10	34	.....	1 20	10
Apprentices.....	8	.....	95	10	.....	.....	.....	.....	.....	.....	.....	.....
Assorters.....	.....	48	50	10	.....	.....	.....	.....	.....	.....	.....	.....
Bricklayers.....	12	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Boss carder.....	1	.....	3 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Boss weaver.....	1	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Boss dyer.....	1	.....	3 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Burnisher.....	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Bottomers.....	4	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Bleachers.....	4	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Beater men.....	3	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Boys.....	18	.....	2 00	10	3	.....	67	10	3	.....	50	10
Boys.....	1	.....	41	10	.....	.....	.....	.....	.....	.....	.....	.....
Brewers.....	8	.....	1 90	10	6	.....	2 40	10	.....	.....	.....	.....
Book-keepers.....	.....	1	1 00	10	1	.....	2 17	10	1	.....	2 25	10
Book-keepers.....	2	.....	1 84	10	2	.....	3 00	10	3	.....	2 50	10
Book-keepers.....	1	.....	4 80	10	1	.....	2 00	10	.....	.....	.....	.....
Bench hands.....	10	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Blacksmiths.....	1	.....	2 75	10	4	.....	1 65	10	1	.....	1 50	10
Blacksmiths.....	18	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Carpenters.....	4	.....	1 50	10	14	.....	1 75	10	3	.....	1 83	10
Carpenters.....	7	.....	1 67	10	89	.....	2 00	10	.....	.....	.....	.....
Collectors.....	1	.....	1 50	10	1	.....	1 34	10	.....	.....	.....	.....
Compositors.....	3	.....	1 50	10	4	.....	2 00	10	.....	5	1 15	10
Compositors.....	8	.....	1 67	10	.....	3	1 00	10	.....	.....	.....	.....
Cellar men.....	11	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Core makers.....	1	.....	2 00	10	16	.....	1 40	10	.....	.....	.....	.....
Coopers.....	3	.....	1 85	10	.....	.....	.....	.....	.....	.....	.....	.....
Carriers.....	9	.....	50	10	7	.....	41	10	.....	.....	.....	.....
Cinder men.....	2	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Counters.....	.....	5	60	10	.....	.....	.....	.....	.....	.....	.....	.....
Cobblers.....	3	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Cart man.....	1	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Cleaners.....	19	.....	1 25	10	5	.....	1 30	10	2	.....	1 50	10
Cleaners.....	2	.....	34	10	3	.....	75	10	1	.....	2 50	10
Clerks in stores.....	74	.....	90	12	.....	14	60	12	.....	.....	.....	.....
Cutters.....	1	.....	1 66	10	2	.....	1 75	10	.....	18	60	10
Drillers.....	3	.....	1 75	10	4	.....	67	10	.....	.....	.....	.....
Drawing shanks.....	1	.....	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Draughtsmen.....	7	.....	2 50	10	10	.....	2 00	10	.....	.....	.....	.....
Drivers.....	1	.....	1 25	10	6	.....	1 35	10	1	.....	1 50	10

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Hamilton—Continued.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Drivers	5		\$1 33	10	2		\$1 84	10				
Engineers.....	1		1 75	10	3		1 67	10	1		\$0 58	10
Engineers.....	15		2 00	10	10		1 50	10	1		1 00	10
Editors	1		3 50	10	1		4 00	10	1		1 00	10
Emery turners.....	6		50	10								
Enamelers.....	9		46	10								
Fitters	7		2 25	10		9	58	10				
Finishers	4		*1	10	10		2 00	10		20	75	10
Finishers	23		50	10								10
Firemen	1		1 25	10	2		1 60	10	7		1 50	10
Firemen	2		2 00	10	4		1 66	10	1		50	10
Foremen.....	2		2 50	10	5		3 00	10	1		8 00	10
Foremen.....	1		1 50	10	1		5 00	10	1		2 10	10
Girls		28	60	10		3	50	10				
Grinders.....	7		*2	10	2		2 00	10				
Helpers	37		50	10	2		85	10	1		45	10
Helpers	2		1 34	10	1		1 50	10	14		1 45	10
Helpers	6		1 12	10	6		1 00	10	3		1 33	10
Helpers	24		1 25	10	2		1 67	10				
Hod carriers.....	13		1 50	10								
Hoe rollers	1		1 75	10								
Ironers		15	1 50	10								
Kilnmen.....	1		2 50	10								
Knitters		30	1 00	10		35	65	10				
Laborers.....	1		1 66	10	179		1 25	10	2		2 50	10
Laborers.....	5		1 00	10	19		75	10	3		60	10
Laborers.....	2		50	10	15		1 35	10	26		1 33	10
Laborers.....	10		1 50	10	18		1 27	10				
Lasters.....	3		2 00	10								
Lamp lighters	8		40	10								
Lathers	3		1 00	10								
Millers.....	31		2 00	10								
Millwrights	5		2 75	10	2		2 00	10	1		2 50	10
Malsters.....	12		1 50	10	17		1 66	10				
Moulders	83		2 25	10	69		2 00	10	30		2 75	10
Moulders	27		1 95	10								
Machine hands	5		1 85	10	5		1 75	10	14		1 50	10
Machine hands.....	3		1 34	10	6		2 50	10	4		2 35	10
Managers	1		2 50	10	1		3 25	10	1		3 00	10
Managers	1		4 50	10								
Machinists.....	17		2 00	10	63		1 80	10	27		2 20	10
Machinists.....	146		2 50	10	50		1 72	10	88		2 25	10
Nickelers	16		60	10	2		2 00	10				
Night watchman	1		1 50	10								
Office clerks.....	1		60	10	1		1 85	10	1		1 00	10
Office clerks.....	1		1 50	10	1		1 67	10	1		50	10
Office clerk	1		3 33	10								
Packers	1		1 35	10	1		1 66	10	6		55	10
Packers	4		1 60	10								
Plowmakers	6		1 75	10	6		2 00	10				
Pressmen	3	5	1 00	10		15	85	10	2		1 50	10
Pressmen	1		1 67	10		1	50	10				
Plasterers.....	15		2 25	10								
Polishers.....	4		*3	10	8		1 50	10				
Pattern makers.....	12		2 50	10	5		2 05	10	3		2 65	10
Pattern makers.....	2		2 00	10	2		2 25	10	6		1 94	10
Painters.....	3		1 50	10	8		1 75	10	37		2 00	10
Painters	6		1 25	10	6		1 52	10				
Reporters	3		1 67	10								
Rag men.....	3		1 75	10								
Rag handlers	5		1 50	10		18	50					
Rubbers	1		1 50	10	1		1 25					
Ribbers		4	50	10								
Rotary men.....	3		1 42	10								

*1 80 cents per 100. *2 14 cents per ounce. *3 12½ cents per dozen.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Hamilton—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per week.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Steamers.....		20	\$1 00	10								
Stove mounters.....	13		2 05	10								
Stock loader.....	1		1 25	10								
Stone masons.....	8		2 75	10								
Shoe cutters.....	2		67	10	1		\$2 50					
Stock cutters.....	1		2 25	10								
Stone cutters.....	4		2 00	10	5		2 25					
Salesmen.....	7		4 00	10	2		2 50		1		\$2 75	10
Salesmen.....	1		67	10	1		3 33					
Spinners.....	3		2 50	10								
Shipping clerks.....	1		2 50	10	1		1 50		8		1 44	10
Superintendents.....	1		6 00	10	1		3 33		1		3 00	10
Superintendents.....	1		4 80	10	1		3 90					
Sawyers.....	3		1 50	10								
Turners.....	1		2 17	10	2		1 67		1		1 33	10
Temperers.....	4		*4	10								
Twisters.....		8	83	10								
Tailors.....	15		2 75	10								
Trimmers.....	3		2 00	10								
Varnishers.....	3		1 40	10								
Weighman.....	1		1 67	10								
Weavers.....		7	1 50	10								
Wool sorters.....	2		1 67	10								
Wrappers.....		25	60	10		16	35					
Warehouse men.....	13		1 33	10								
Woodworkers.....	1		2 00	10	4		1 66					
Yardmen.....	3		1 25	10								

Total number of men employed, 2,136. Total number of women employed, 353.

*45 cents per ounce.

Carrollton, Carroll County.

Blacksmiths.....	5		1 75	10								
Brickmakers.....	4		2 75	10	6		2 00	10				
Bricklayers.....				10								
Book-keepers.....		1	1 50	10								
Clerks in stores.....	7		1 75	10								
Carpenters.....	9		2 00	10								
Dressmakers.....		7	1 00	10								
Laborers.....	4		1 25	10								
Moulders.....	2		2 25	10								
Machinists.....	2		2 00	10								
Off-bearers.....	4		1 50	10								
Painters.....	7		1 70	10								
Plasterers.....	5		2 00	10								
Plumbers.....	3		2 00	10								
Patternmakers.....	2		2 50	10								
Street laborers.....	8		1 50	10								
Stone masons.....	4		2 25	10								
Tanners.....	6		2 00	10								
Tailors.....	3		2 25	10								
Woodworker.....	1		2 00	10								

Total number of men employed, 82. Total number of women employed, 8.

St. Paris, Champaign County.

Apprentices.....	1		1 00	10								
Bricklayers.....	2		2 25	10								
Blacksmiths.....	1		2 50	10	2		2 25	10	5		1 75	10
Carpenters.....	7		2 00	10								
Clerks in stores.....	18		1 25	10		3	75	10				
Dressmakers.....		5	75	10								

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

St. Paris—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Engineers	1	.....	\$2 00	10	1	.....	\$1 75	10	.....	.....	.....	.....
Editor	1	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Helpers	2	.....	1 00	10	1	.....	1 25	10	.....	.....	.....	.....
Hod carriers	2	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Laborers	2	.....	1 35	10	7	.....	1 25	10	2	.....	\$1 50	10
Millers	2	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Machinemen	4	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Off-bearer	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Plasterers	3	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Pressmen	2	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Painters	8	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Stone masons	2	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Sawyer	1	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Trimmer	1	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Tailors	2	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Woodworkers	1	.....	2 00	10	1	.....	2 50	10	.....	.....	.....	.....

Total number of men employed, 83. Total number of women employed, 8.

Urbana, Champaign County.

Apprentices	2	.....	80	10	2	.....	75	10	1	.....	50	10
Apprentices	8	.....	84	10	.....	.....	.....	.....	.....	.....	.....	.....
Assorters	1	.....	1 50	10	.....	10	50	10	.....	.....	.....	.....
Burlers .....	.....	12	80	10	.....	.....	.....	.....	.....	.....	.....	.....
Broom makers	4	.....	2 00	10	24	.....	2 05	10	12	.....	1 75	10
Broom makers	3	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Bunchers	2	.....	1 00	10	2	2	50	10	.....	.....	.....	.....
Blacksmiths	27	.....	2 50	10	16	.....	2 00	10	25	.....	1 50	10
Boiler	1	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Boys	25	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Bricklayers	10	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Clerks in stores	45	.....	1 25	10	.....	20	60	10	.....	.....	.....	.....
Car builders	60	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Compositors	4	.....	2 25	10	2	.....	1 75	10	1	.....	2 00	10
Compositors .....	.....	3	84	10	.....	.....	.....	.....	.....	.....	.....	.....
Carriers	3	.....	25	10	.....	.....	.....	.....	.....	.....	.....	.....
Cigarmakers	31	.....	2 00	9	2	.....	1 50	10	8	.....	1 75	8
Cigarmakers	3	.....	3 34	10	.....	.....	.....	.....	.....	.....	.....	.....
Carpenters	17	.....	2 00	10	6	.....	2 50	10	20	.....	1 80	10
Cupalo tenders	2	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Clerks	5	.....	2 50	10	6	.....	2 00	10	.....	.....	.....	.....
Carders	1	.....	2 00	10	4	.....	66	10	.....	.....	.....	.....
Curriers	2	.....	1 35	10	2	.....	1 75	10	.....	.....	.....	.....
Core makers	1	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Dyers	2	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Dressmakers .....	.....	13	75	10	.....	.....	.....	.....	.....	.....	.....	.....
Editors	1	.....	2 00	10	1	.....	3 34	10	1	.....	3 00	10
Engineers	1	.....	1 25	10	1	.....	2 00	10	1	.....	1 35	10
Engineers	2	.....	1 50	10	1	.....	1 75	10	1	.....	1 00	10
Finishers	4	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Foremen	5	.....	2 00	10	1	.....	2 25	10	1	.....	1 75	10
Foremen	1	.....	3 00	10	1	.....	3 33	10	7	.....	2 50	10
Foremen	1	.....	6 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Hod carriers	9	.....	1 35	10	.....	.....	.....	.....	.....	.....	.....	.....
Helpers	1	.....	1 25	10	1	.....	41	10	6	.....	84	10
Ironers	2	.....	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Laborers	19	.....	1 00	10	4	.....	1 40	10	2	.....	1 50	10
Laborers	85	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Machinists	2	.....	2 25	10	15	.....	2 50	10	.....	.....	.....	.....
Moulders	8	.....	2 50	10	5	.....	2 25	10	.....	.....	.....	.....
Mounters	2	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Millers	1	.....	2 00	10	2	.....	1 50	10	.....	.....	.....	.....
Plasterers	9	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Plumbers	2	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Pattern makers	1	.....	2 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Pressmen	6	.....	1 75	10	2	.....	1 66	10	.....	.....	.....	.....

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Urbana—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Packers	2	...	\$1 14	10	...	...	...	...	...	...	...	...
Painters	5	...	1 50	10	19	...	175	10	7	...	2 00	10
Painters	4	...	1 00	10	...	...	...	...	...	...	...	...
Starchers .....	...	3	80	10	...	...	...	...	...	...	...	...
Salesmen	4	...	5 00	10	...	...	...	...	...	...	...	...
Spinners	1	...	1 75	10	4	...	66	10	...	...	...	...
Spoolers	4	...	30	10	...	...	...	...	...	...	...	...
Sewers	3	...	1 75	10	6	...	2 00	10	...	...	...	...
Sizers	5	...	1 00	10	13	...	66	10	...	3	84	10
Sawyers	2	...	2 25	10	...	...	...	...	...	...	...	...
Strippers	3	...	41	10	7	...	34	10	...	3	40	10
Strippers	3	...	50	10	3	...	35	10	...	...	...	...
Street laborers	20	...	1 25	10	...	...	...	...	...	...	...	...
Stone masons	8	...	2 50	10	...	...	...	...	...	...	...	...
Truckmen	15	...	1 30	10	...	...	...	...	...	...	...	...
Teamster	1	...	1 50	10	...	...	...	...	...	...	...	...
Tailors	11	...	2 50	10	...	...	...	...	...	...	...	...
Tinners	2	...	2 50	10	...	...	...	...	...	...	...	...
Trimmers	6	...	2 00	10	...	...	...	...	...	...	...	...
Weavers	1	...	3 00	10	5	...	1 50	10	...	4	1 25	10
Warpers	2	...	1 35	10	...	...	...	...	...	...	...	...
Woodworkers	7	...	2 00	10	...	...	...	...	...	...	...	...

Total number of men employed, 780. Total number of women employed, 73.

Springfield, Clarke County.

Apprentices	2	...	75	9	1	...	80	10	2	...	1 10	10
Apprentices	4	...	60	10	...	...	...	...	...	...	...	...
Boys	1	...	50	9	1	...	33 ¹ / ₃	10	1	...	66 ² / ₃	10
Boys	2	...	45	10	1	...	60	10	18	...	84	10
Boys	28	...	75	10	4	...	40	10	5	...	1 00	10
Binders .....	...	9	1 25	10	...	8	80	9	...	...	...	...
Bench hands	10	...	1 75	9	...	...	...	...	...	...	...	...
Brewers	6	...	2 50	10	...	...	...	...	...	...	...	...
Boiler makers	22	...	2 50	10	50	...	2 25	8	30	...	1 75	9
Blacksmiths	161	...	2 50	9	26	...	2 25	9	30	...	1 75	10
Blacksmiths	12	...	2 00	10	3	...	1 60	10	3	...	1 25	9
Blacksmiths	3	...	1 40	9	4	...	1 45	10	5	...	1 70	10
Blacksmiths	30	...	1 85	10	1	...	2 45	9	...	...	...	...
Book-keepers	1	...	2 50	10	1	...	1 75	10	1	...	2 25	10
Book-keepers	1	...	2 00	10	...	...	...	...	...	...	...	...
Bricklayers	55	...	2 25	10	...	...	...	...	...	...	...	...
Basket makers .....	...	8	1 50	9	...	...	...	...	...	...	...	...
Carpenters	79	...	2 50	10	28	...	2 00	9	2	...	1 50	9
Cabinet makers	2	...	2 00	8	13	...	2 50	10	...	...	...	...
Core makers	3	...	1 25	10	1	...	1 50	9	15	...	1 75	9
Core makers	20	...	1 70	10	...	...	...	...	...	...	...	...
Collectors	7	...	3 00	10	2	...	2 50	10	...	...	...	...
Compositors	28	...	2 50	8	...	1	*1	10	18	...	2 25	9
Compositors	24	...	2 00	8	18	...	*2	10	8	...	2 45	9
Compositors	5	...	1 25	10	...	...	...	...	...	...	...	...
Cold rollers	5	...	1 75	10	...	...	...	...	...	...	...	...
Clerks	4	3	1 00	8	...	1	1 75	9	...	2	80	9
Clerks	21	...	3 50	9	59	...	3 00	9	2	9	2 00	9
Clerks	3	...	3 20	9	1	...	1 70	10	25	...	4 90	9
Clerks	4	...	5 00	9	7	...	2 50	9	6	...	3 10	9
Clerks	7	...	1 95	9	2	...	1 90	10	570	...	1 20	10
Drillers	1	...	1 25	10 ¹ / ₄	...	...	...	...	...	...	...	...
Dressmakers .....	...	125	75	10	...	...	...	...	...	...	...	...
Drivers	4	...	1 50	10	...	...	...	...	...	...	...	...
Electrotypers	1	...	3 00	10	3	...	1 50	8	...	...	...	...
Engineers	2	...	1 75	9	1	...	2 25	9	2	...	2 50	8

*1 30 cents per thousand ems. *2 30 cents per thousand ems.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Springfield—Continued.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Engineers.....	1		\$1 50	10 ¹ / ₄	1		\$1 50	10	6		\$2 00	10
Engineers.....	5		1 75	10								
Emery tender.....	1		1 50	10								
Editors	3		3 50	10	1		2 00	10	1		4 00	10
Editors	1		3 00	10								
Engravers	2		2 05	9	1		2 50	8	3		2 75	8
Foremen	1		1 75	10	5		3 50	10	2		2 00	10
Finger bar men.....	2		1 40	10								
Folders		20	75	10		13	85	10				
Finishers	15		1 75	9	9		1 50	9	2		2 50	10
Grinders.....	45		2 75	10								
Helpers.....	3		1 75	9	6		1 50	10				
Hod carriers.....	50		1 50	10								
Heaters	4		3 00	10								
Laborers	46		1 75	9	396		1 25	10	110		1 35	
Laborers.....	328		1 50	10	279		1 40	10	12		1 75	10
Laborers.....	5		75	9	6		2 00	10	74		1 27	10
Laborers.....	50		1 65	9	75		1 60	9	40		80	10
Laborers.....	47		1 25	10								
Machinists.....	427		1 75	10	394		2 00	10	11		2 40	10
Machinists.....	11		2 40	9	4		1 50	10	40		1 60	9
Machinists.....	1		2 25	9	6		2 50	10 ¹ / ₄	4		2 25	10 ¹ / ₄
Machinists.....	3		2 00	10 ¹ / ₄	6		2 25	10				
Machinememen	500		1 55	10								
Mailing clerk.....	1		1 25	10								
Managers	4		2 50	10 ¹ / ₄	1		3 50	10				
Moulders	212		2 25	10	217		2 50	9	14		2 35	9
Moulders	116		2 00	9	5		3 50	9	1		3 00	9
Moulders	40		2 75	10	5		1 75	10	60		2 50	10
Office men.....	5		3 00	10								
Pattern makers.....	8		2 50	9	4		1 75	10	7		2 00	10
Pattern makers	1		3 00	9	12		2 50	10				
Painters	200		2 00	10	21		1 50	9	1		1 00	10
Painters	1		1 25	9	1		1 60	10	20		2 25	10
Painters	5		1 85	9	19		1 75	9	49		2 10	10
Painters	4		2 50	9								
Planers	3		1 50	10								
Packers		2	1 00	9								
Polishers.....	2		1 75	9								
Platers.....	8		2 50	10								
Pressmen	4	1	1 50	8	2		1 75	8	5		3 50	9
Pressmen	3		2 50	8	1		2 25	9	1		1 00	9
Pressmen	2		1 75	9	9		1 85	8	3		1 75	10
Pressman	1	2	1 58 ¹ / ₂	10								
Plasterers	30		2 50	10								
Plumbers	11		2 25	10								
Roll turner.....	1		1 75	10								
Rollers.....	20		2 25	10								
Reporters	2		2 50	8	5		2 30	9	2		2 00	10
Strippers.....		2	70	10		1	80	10				
Solicitors	2		2 00	10								
Stenographers	1		3 50	10		1	1 75	10	1		1 95	10
Shearman	1		1 25	10								
Shearmen	3		1 35	10								
Stone masons.....	30		3 00	10	9		3 33	10				
Salesmen	9		3 33	10								
Teamsters	1		2 15	10	1		1 50	9	1		1 65	10
Teamsters	8		2 50	10								
Tailors.....	40		1 50	9								
Trimmers.....	3		2 25	9		6	1 25	9	8		2 75	9
Trimmers.....	4		1 75	10		2	1 00	10				
Traveling men	1		2 50	9	7		2 25	9	3		3 25	10
Traveling men	2		4 00	9								
Tool makers.....	25		2 00	10								
Vice hands.....	2		2 00	9								
Washers		18	80	9								

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Springfield—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Wood workers.....	167	.....	\$2 00	10	23	.....	\$1 50	10	92	.....	\$1 75	9
Wood workers.....	17	.....	2 25	9	2	.....	1 60	10	8	.....	1 90	9
Wood workers.....	40	.....	2 20	10	.....	.....	.....	.....	.....	.....	.....	.....
Wheel makers.....	40	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Women .....	.....	5	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 6,268. Total number of women employed, 239.

Wilmington, Clinton County.

Apprentices	2	.....	75	10	.....	.....	.....	.....	.....	.....	.....	.....
Blacksmiths	5	.....	1 60	10	8	.....	1 50	10	.....	.....	.....	.....
Bricklayers	6	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Carpenters.....	15	.....	2 00	10	1	.....	1 75	10	1	.....	2 50	10
Clerks in dry goods stores.....	14	.....	1 34	12	.....	4	85	10	.....	.....	.....	.....
Clerks in hardware stores.....	6	.....	1 34	12	.....	.....	.....	.....	.....	.....	.....	.....
Clerks in groceries.....	10	.....	1 11	12	.....	3	1 11	10	.....	.....	.....	.....
Clerks in drug stores.....	6	.....	1 50	12	.....	.....	.....	.....	.....	.....	.....	.....
Clerks in clothing stores.....	5	.....	1 53	12	.....	.....	.....	.....	.....	.....	.....	.....
Compositors	4	.....	2 00	12	.....	2	1 25	10	.....	.....	.....	.....
Dressmakers.....	.....	6	57	10	.....	.....	.....	10	.....	.....	.....	.....
Drivers	5	.....	1 00	10	1	.....	1 25	10	.....	.....	.....	.....
Editors	3	.....	2 50	10	1	.....	2 75	10	.....	.....	.....	.....
Engineers	2	.....	1 50	10	1	.....	1 25	10	2	.....	1 66	10
Firemen	2	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Helpers	5	.....	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Hod carriers.....	4	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Laborers.....	13	.....	1 00	10	4	.....	1 10	10	.....	.....	.....	.....
Machinists.....	2	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Machine hands.....	2	.....	1 50	10	3	.....	1 75	10	1	.....	1 60	10
Millers.....	4	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Millwrights	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Painters	3	.....	2 00	10	24	.....	1 50	10	.....	.....	.....	.....
Plasterers	6	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Pressmen	2	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Stone masons.....	3	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Tailors.....	7	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Tinners	4	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 188. Total number of women employed, 15.

East Liverpool, Columbiana County.

Apprentices	1	.....	66	10	4	.....	50	10	1	.....	90	10
Apprentice	1	.....	60	10	.....	.....	.....	.....	.....	.....	.....	.....
Bricklayers	21	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Blacksmiths	3	.....	1 66	10	3	.....	2 00	10	.....	.....	.....	.....
Book-keepers	1	.....	4 00	10	1	.....	2 25	10	2	.....	2 00	9
Book-keepers	3	.....	2 50	10	1	.....	1 25	10	1	.....	3 00	9
Book-keepers	1	.....	1 50	10	1	.....	1 00	9	1	.....	2 50	9
Book-keepers	1	.....	3 33	9	1	.....	2 33	9	1	.....	2 75	9
Book-keepers	2	.....	1 50	9	.....	.....	.....	.....	.....	.....	.....	.....
Bisque brushers.....	.....	3	75	10	.....	.....	.....	.....	.....	.....	.....	.....
Batting out boys.....	9	.....	1 00	9	6	.....	1 00	10	1	.....	1 25	8½
Batting out boys.....	2	.....	83	8½	.....	.....	.....	.....	.....	.....	.....	.....
Coopers	7	.....	1 75	10	2	.....	2 50	10	.....	.....	.....	.....
Cylinder hands.....	1	.....	1 75	12	1	.....	1 50	12	.....	.....	.....	.....
Clay makers.....	6	.....	1 50	10	2	.....	2 00	10	2	.....	2 25	9
Clay makers.....	3	.....	1 75	9	1	.....	75	9	2	.....	1 25	9
Clay makers.....	5	.....	1 50	9	8	.....	1 75	10	1	.....	2 00	9
Clay makers.....	5	.....	1 60	10	1	.....	2 50	9½	2	.....	2 00	9½
Clay makers.....	2	.....	1 00	9	.....	.....	.....	.....	.....	.....	.....	.....
Compositors	2	.....	1 60	10	1	.....	1 33	10	2	.....	1 50	10
Compositors	1	.....	2 00	10	3	.....	1 66	10	1	.....	1 35	10
Collector.....	1	.....	*	10	.....	.....	.....	.....	.....	.....	.....	.....

* 15 per cent.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

East Liverpool—Continued.

Occupation.	No. employed.		Wages per day.	Hours of labor daily.		No. employed.		Wages per day.	Hours of labor daily.		No. employed.		Wages per day.	Hours of labor daily.
	Men.	Women.				Men.	Women.				Men.	Women.		
Clerks in stores.....	9		\$ 66	10		6		\$ 50	10		4		\$2 66	10
Clerks in stores.....		5	1 00	10		10		1 33	10		10		4 00	10
Clerks in stores.....	10		1 66	10		11		2 00	10		10		1 00	10
Decorators.....	5	1	2 00	10		1		6 00	10		2		33	10
Decorators.....	3	4	2 25	10		2		4 00	10		1		1 17	10
Decorators.....		16	75	10		10	4	1 50	10		21		50	10
Decorators.....	3		3 00	10			9	40	10		11		2 50	10
Decorators.....		12	50	9			11	60	10			1	85	10
Decorators.....		16	1 00	9		2		40	10					
Decorators.....		5	1 25	10		15		2 75	10		1		8 00	10
Decorators.....		1	1 75	10										
Decorators' helpers.....	1		50	10		1		75	10		6		60	10
Helpers.....		8	80	10		6		1 00	10					
Dish makers.....	2		3 00	10		2		2 50	9		1		3 50	10
Dish makers.....	1		1 80	10		1		16	10		1		2 50	10
Dish makers.....	1		2 00	10		3		2 25	10 $\frac{1}{2}$		2		2 00	9 $\frac{1}{2}$
Dish makers' helpers.....	3		80	10		1		1 25	10 $\frac{1}{2}$		1		1 50	10
Helpers.....	1		1 00	10										
Dippers.....	18		2 50	9		1		3 00	10		2		2 75	10
Dippers.....		1	1 10	9		1		3 33	9		5		2 25	9
Dippers' helpers.....		4	75	9			3	60	9		1		70	9
Helpers.....	1		1 10	9			3	65	9		2		50	9
Helpers.....	1		85	9			5	75	9					
Engineers.....	5		2 00	9		1		2 25	9		2		1 50	9
Engineers.....	1		1 75	9		1		1 68	9					
Foremen.....	11		2 50	9		1		4 00	9		8		3 00	9
Foremen.....	8		2 25	9		1		1 50	9		4		2 75	9
Foremen.....	1		2 67	9		2		2 00	9		1		2 15	9
Firemen.....	2		2 75	9		1		3 00	9		3		2 50	9
Fitters.....		7	1 00	9			1	1 25	9		3		1 25	9
Fitters.....		4	80	9			10	1 00	9			4	1 25	8 $\frac{1}{2}$
Fitters.....		5	75	9										
Founder.....	1		2 25	10										
Helpers.....	3		1 25	10		2		75	9		2		1 50	10
Helpers.....	3		80	10		1		75	8		3		75	9
Helpers.....	1		1 00	10										
Hod carriers.....	7		1 50	10		3		1 25	10		3		2 00	10
Hod carriers.....	12		1 75	10										
Handlers.....	4		3 00	10		3		2 50	10		1		2 25	9
Handlers.....	1		1 75	9		1		2 25	10		3		3 00	9
Handlers' helpers.....	2		67	10		2		75	10		1		2 00	10
Handlers' helpers.....	2		50	10		1		70	10					
Jiggermen.....	5		2 75	10		3		4 00	10		6		2 00	9
Jiggermen.....	5		3 00	10		10		2 25	10		3		2 50	10
Jiggermen.....	14		2 50	9		13		3 00	9		6		3 50	9
Jiggermen.....	4		4 00	9		9		3 00	8 $\frac{1}{2}$		6		2 50	8
Jiggermen.....	1		1 75	8										
Jiggermen helpers.....		3	1 25	10		9		80	10		17		75	9
Jiggermen helpers.....		8	90	9		23		66 $\frac{1}{2}$	9 $\frac{1}{2}$		7		1 00	5
Jiggermen helpers.....	3		75	7		3		66	7		5		75	10
Jiggermen helpers.....	1		1 00	9			3	75	9					
Knob dresser.....	1		1 00	8 $\frac{1}{2}$										
Kiln men.....	69		2 00	9		15		1 75	7		1		2 50	8
Kiln men.....	11		1 75	8		1		2 75	8		16		1 50	8
Kiln men.....	10		2 25	8 $\frac{1}{2}$		56		2 00	8		1		1 25	8
Kiln men.....	5		2 00	10		1		1 50	10		7		2 10	9
Kiln men.....	1		2 50	9		6		2 33	9		5		1 75	7
Kiln men.....	5		1 35	8		1		3 00	8					
Laborers.....	1		1 25	10		10		1 50	7		68		1 50	10
Laborers.....	2		1 50	9		4		1 65	10		15		1 75	10
Laborers.....	3		1 85	10		87		1 50	10		11		1 25	10
Mould makers.....	1		3 50	10		1		2 22	9		6		2 00	9
Mould makers.....	1		4 00	10		7		3 00	9		1		2 25	8 $\frac{1}{2}$
Mould makers.....	2		2 50	8 $\frac{1}{2}$		1		2 50	10		1		50	10
Mould makers.....	2		75	9										
Machinists.....	3		2 25	10		34		2 00	10					
Mould runners.....	12		83	9		6		54	9		7		75	9
Mould runners.....	8		80	9		17		60	9		2		75	8
Mould runners.....	1		1 00	8		13		1 00	10		10		1 10	9

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

East Liverpool—Concluded.

Occupation.	No. employed.		Wages per day.	Hours of labor daily.	No. employed.		Wages per day.	Hours of labor daily.	No. employed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Mould runners.....	1	.....	\$ 83	8½	2	.....	\$ 60	8½	3	.....	\$ 75	10
Mould runners.....	9	.....	65	10	1	.....	1 00	9½	.....	.....	.....	.....
Machine hands.....	1	.....	1 25	9	2	.....	1 00	9	.....	.....	.....	.....
Mechanics.....	2	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Office clerks.....	1	.....	2 00	10	2	.....	1 75	10	1	.....	60	10
Odd men.....	9	.....	1 50	10	1	.....	2 00	8½	6	.....	1 50	9
Pressers.....	26	.....	2 25	10	5	.....	2 00	9½	63	.....	2 00	9
Pressers.....	27	.....	2 00	10	3	.....	1 10	9	5	.....	1 30	9
Pressers.....	11	.....	2 50	10	25	.....	75	9	1	.....	1 50	10
Pressers.....	50	.....	1 00	9	20	.....	1 50	9	28	.....	2 50	9
Pressers.....	4	.....	2 60	10	10	.....	3 00	10	17	.....	2 75	10
Pressers.....	25	.....	1 25	10	15	.....	2 25	10	8	.....	2 25	10
Pressers' helpers.....	7	.....	1 15	10	1	.....	60	10	4	.....	1 50	8½
Pressers' helpers.....	5	.....	1 25	10	7	.....	75	10	1	.....	37	10
Pressers' helpers.....	1	.....	40	10	3	.....	1 10	10	2	.....	50	10
Pressers' helpers.....	1	.....	83	10	2	.....	1 30	10	1	.....	60	10
Packers.....	1	.....	3 50	10	2	.....	2 00	9	3	.....	2 25	10
Packers.....	4	.....	2 50	9	1	.....	1 50	9	10	.....	2 00	10
Packers.....	4	.....	3 00	9	1	.....	1 25	9	1	.....	2 50	8½
Packers.....	2	.....	2 75	9	1	.....	3 00	10	.....	.....	.....	.....
Packers' helpers.....	5	.....	75	9	2	.....	1 50	9	1	.....	2 00	10
Packers' helpers.....	1	.....	2 50	10	2	.....	1 50	9	1	.....	50	9
Pin makers.....	1	.....	1 50	10	1	.....	1 75	10	1	.....	50	10
Shoemakers.....	13	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Superintendents.....	3	.....	2 00	10	1	.....	2 25	10	5	.....	2 50	9
Superintendents.....	3	.....	4 00	9	3	.....	2 00	9	2	.....	3 00	9
Superintendents.....	3	.....	3 33	9	1	.....	2 33	9	1	.....	5 00	9
Solicitor.....	1	.....	1 50	10	1	.....	1 50	10	.....	.....	.....	.....
Slip house mixer.....	1	.....	2 00	8	1	.....	1 50	10	.....	.....	.....	.....
Slip house pressmen.....	2	.....	1 50	9	.....	.....	.....	.....	.....	.....	.....	.....
Spongers.....	1	.....	40	9	1	.....	60	9	.....	6	1 00	9½
Stilt maker.....	1	.....	50	9	.....	.....	.....	.....	.....	.....	.....	.....
Shipping clerks.....	1	.....	2 00	10	1	.....	1 00	9	.....	.....	.....	.....
Sagger makers.....	2	.....	3 00	10	1	.....	1 75	10	9	.....	2 00	9
Sagger makers.....	2	.....	2 50	10	2	.....	2 10	10	3	.....	2 50	9
Sagger makers.....	2	.....	1 50	10	2	.....	1 25	10	4	.....	2 00	8
Sagger makers.....	2	.....	2 00	10	2	.....	1 66	7	.....	.....	.....	.....
Turners.....	2	.....	2 50	10	4	.....	2 00	9	1	.....	2 00	8
Turners.....	1	.....	2 00	10	4	.....	1 75	9	7	.....	2 75	9
Turners.....	1	.....	2 75	10	1	.....	3 00	9	2	.....	2 50	9
Turners.....	1	.....	1 50	9	.....	2	1 00	9	5	.....	2 66	9
Turners.....	3	.....	3 00	9	3	.....	2 55	9	2	.....	2 00	9
Turners' helpers.....	.....	2	80	10	.....	10	1 00	10	.....	1	1 00	9
Turners' helpers.....	.....	4	75	9	.....	2	50	9	.....	6	75	10
Turners' helpers.....	.....	7	1 25	9	.....	1	85	9	.....	1	1 50	9
Turners' helpers.....	.....	1	90	9	.....	.....	.....	.....	.....	.....	.....	.....
Taking off hands.....	.....	1	75	10	.....	.....	.....	.....	.....	.....	.....	.....
Throwers.....	1	.....	3 00	9	2	.....	2 50	9	1	.....	1 25	9
Throwers.....	.....	2	70	9	.....	.....	.....	.....	.....	.....	.....	.....
Teamsters.....	2	.....	1 75	10	3	.....	1 50	10	3	.....	3 00	10
Watchmen.....	2	.....	1 50	10	1	.....	1 25	12	.....	.....	.....	.....
Wagon makers.....	3	.....	1 66	10	.....	.....	.....	.....	.....	.....	.....	.....
Warehouse hands.....	67	.....	75	10	1	12	75	9	.....	50	75	8
Warehouse hands.....	1	3	60	8	.....	1	60	9	.....	5	60	10
Warehouse hands.....	.....	10	50	10	.....	35	50	9	.....	3	80	9
Warehouse hands.....	1	.....	2 50	10	.....	3	66	10	1	.....	2 33	10
Warehouse hands.....	.....	9	83½	10	.....	2	1 00	10	3	2	1 00	10
Warehouse hands.....	.....	2	70	10	.....	1	1 25	10	13	.....	1 75	9
Warehouse hands.....	8	.....	2 00	10	.....	1	1 25	9	.....	9	1 00	10
Warehouse hands.....	.....	1	90	10	.....	14	90	9	.....	.....	.....	.....

Total number of men employed, 1,729. Total number of women employed, 493.

EAST LIVERPOOL.

This is one of the most remarkable manufacturing cities in the State. It has been built up within a few years, prospering on a single industry. The statistics here were gathered by the Commissioner, and at the time of taking them other potteries were in course of construction, which, when com-

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

New Lisbon—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.		No. em- ployed.		Wages per day.	Hours of labor daily.		No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.				Men.	Women.				Men.	Women.		
Manager.....	1	.....	\$2 50	10		.....	.....				.....	.....
Millers.....	1	.....	2 50	10		1	.....	\$1 35	10		.....	.....
Plasterers.....	15	.....	2 00	10		.....	.....				.....	.....
Painters.....	17	.....	2 00	10		3	.....	1 15	10		.....	.....
Spoolers.....	.....	4	50	10		.....	.....				.....	.....
Spinners.....	4	.....	75	10		.....	.....				.....	.....
Superintendents.....	1	.....	1 75	10		1	.....	2 50	10		.....	.....
Solicitor ..	1	.....	1 50	10		.....	.....				.....	.....
Stone masons.....	3	.....	3 00	10		.....	.....				.....	.....
Teamsters.....	20	.....	1 25	10		.....	.....				.....	.....
Tailors.....	6	.....	2 00	10		.....	.....				.....	.....
Trimmers.....	3	.....	2 00	10		.....	.....				.....	.....
Weavers.....	1	18	*1	10		.....	.....				.....	.....
Wool sorters..	1	.....	1 50	10		.....	.....				.....	.....
Woodworkers.....	4	.....	2 00	10		.....	.....				.....	.....

Total number of men employed, 252. Total number of women employed, 35.

Salem.

Apprentices.....	4	.....	1 00	10		10	.....	1 50	10		4	.....	1 25	10
Apprentices.....	15	.....	90	10		.....	.....				.....	.....
Annealers.....	2	.....	2 25	10		.....	.....				.....	.....
Assorters.....	18	.....	3 00	10		.....	.....				.....	.....
Barbing.....	2	.....	1 50	10		.....	.....				.....	.....
Blacksmiths.....	3	.....	2 65	10		16	.....	1 75	10		.....	.....
Book-keeper.....	.....	1	1 25	10		.....	.....				.....	.....
Bricklayers.....	27	.....	3 00	10		.....	.....				.....	.....
Clerks.....	4	.....	2 00	10		.....	12	1 50	10		5	.....	2 75	10
Cleaners.....	10	.....	1 65	10		.....	.....				.....	.....
Compositors.....	3	.....	1 83 ¹ / ₃	10		.....	.....				.....	.....
Cupalo men.....	2	.....	2 00	10		.....	.....				.....	.....
Carpenters.....	3	.....	1 75	10		62	.....	2 00	10		.....	.....
Can makers.....	2	.....	2 00	10		.....	.....				.....	.....
Cabinet makers.....	28	.....	2 25	10		.....	.....				.....	.....
Clerks in stores.....	63	.....	1 66 ² / ₃	10		.....	50	1 00	10		.....	.....
Cornice makers.....	25	.....	2 50	10		.....	.....				.....	.....
Dressmakers.....	.....	56	70	10		.....	.....				.....	.....
Engineers.....	1	.....	1 25	10		1	.....	2 00	10		1	.....	1 50	10
Engineers.....	2	.....	2 50	10		.....	.....				.....	.....
Electrician.....	1	.....	1 50	10		.....	.....				.....	.....
Foremen.....	5	.....	2 75	10		2	.....	3 00	10		.....	.....
Firemen.....	2	.....	2 00	10		.....	.....				.....	.....
Gummers.....	.....	2	83 ¹ / ₃	10		.....	.....				.....	.....
Helpers.....	2	.....	1 37 ¹ / ₂	10		.....	.....				.....	.....
Hod carriers.....	9	.....	1 75	10		.....	.....				.....	.....
Laborers.....	14	.....	1 25	10		75	.....	1 35	10		4	.....	2 00	10
Laborers.....	13	.....	1 40	10		28	.....	1 50	10		3	.....	1 65	10
Moulders.....	16	.....	4 00	10		25	.....	3 00	10		1	.....	1 50	10
Moulders.....	10	.....	3 25	10		.....	.....				.....	.....
Machinists.....	13	.....	2 50	10		6	.....	2 25	10		75	.....	2 10	10
Nail cutters.....	75	.....	1 50	10		.....	.....				.....	.....
Pressmen.....	2	.....	1 83 ¹ / ₃	10		.....	.....				.....	.....
Press feeders.....	.....	4	66 ² / ₃	10		.....	.....				.....	.....
Polisher.....	1	.....	2 00	10		.....	.....				.....	.....
Packers.....	.....	15	87	10		12	.....	1 45	10		15	.....	2 25	10
Plumber.....	1	.....	1 75	10		.....	.....				.....	.....
Rattlers.....	14	.....	1 25	10		.....	.....				.....	.....
Slaters.....	1	.....	2 25	10		20	.....	3 00	10		.....	.....
Staple cutters.....	1	.....	2 37 ¹ / ₂	10		.....	.....				.....	.....
Stockers.....	10	.....	1 25	10		.....	.....				.....	.....
Scrap cutters.....	2	.....	1 25	10		.....	.....				.....	.....
Stenographer.....	.....	1	1 50	10		.....	.....				.....	.....
Stokers.....	2	.....	1 50	10		.....	.....				.....	.....
Stove mounters.....	5	.....	3 25	10		.....	.....				.....	.....
Stone masons.....	15	.....	2 75	10		.....	.....				.....	.....
Tinners.....	2	.....	2 25	10		.....	.....				.....	.....

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Wellsville—Concluded.

Occupation.	No. employed.		Wages per day.	Hours of labor daily.	No. employed.		Wages per day.	Hours of labor daily.	No. employed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Setters	1	.....	1 75	10	2	.....	\$2 00	10	1	.....	\$2 25	10
Slip makers.....	2	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Sagger makers.....	2	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Superintendent	1	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Spaddler.....	1	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Sawyers.....	1	.....	2 25	10	2	.....	1 75	10	4	.....	1 50	10
Stone masons.....	6	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Skilled workmen	50	.....	2 50	10	2	.....	3 00	10	.....	.....	.....	.....
Tinners	3	.....	2 15	10	.....	.....	.....	.....	.....	.....	.....	.....
Tailors.....	8	.....	2 50	10	.....	12	1 00	10	.....	.....	.....	.....
Teamster	1	.....	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Turners.....	1	.....	2 50	10	2	.....	2 00	10	2	4	1 50	10
Turners.....	12	1	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Unskilled workmen.....	8	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Wagonmakers	2	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Watchmen.....	1	.....	1 45	10	2	.....	1 50	10	1	.....	1 75	10

Total number of men employed, 767. Total number of women employed, 85.

Coshocton, Coshocton County.

Bleachers	3	1 35	12							
Blacksmiths	8	2 00	10	4	1 85	10	1	2 50	10	
Book-keeper	1	2 00	12							
Bricklayers	5	2 50	10							
Compositors	2	2 09	9	1	1 66	9	2	1 50	10	
Compositors	2	1 00	9							
Cutters	5	50	12							
Carpenters	10	2 00	10	4	1 75	10				
Coopers	3	1 00	10							
Clerks in stores	37	14 12	14							
Dressmakers	10	1 25	10							
Engineers	2	1 35	10	1	1 75	10	1	2 00	10	
Engineers	1	1 50	12							
Foremen	3	2 00	12							
Finishers	1	1 50	10	1	1 30	10				
Machine tenders	2	1 75	12							
Moulder	1	1 50	10							
Millers	2	1 25	10	2	1 50	10				
Manager	1	3 50	12							
Office boy	1	66	10							
Pressmen	2	1 00	10							
Painters	2	1 75	10	7	2 00	8	2	1 85	10	
Packer	1	1 00	12							
Plasterers	4	2 50	10							
Repairer	1	1 50	12							
Street laborers	4	1 50	10							
Stone masons	5	2 50	10							
Type setters	12	1 50	9							
Traveling agent	1	1 66	10							
Trimmers	2	1 50	10	1	1 85	10				
Teamsters	4	1 25	10	1	1 50	10	1	1 00	12	
Teamsters	1	1 30	12							
Tailors	15	1 60	10		15	83	10			
Woodworkers	1	1 25	10	2	1 85	10				

Total number of men employed, 169. Total number of women employed, 46.

Roscoe.

[illegible]

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Roscoe—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Engineers	2	.....	\$1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Foremen	2	.....	1 75	10	3	.....	\$2 00	10	.....	.....	.....	.....
Finishers	3	.....	1 66	10	1	.....	1 25	10	.....	.....	.....	.....
Fireman	1	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Helpers	6	.....	50	10	.....	.....	.....	.....	.....	.....	.....	.....
Laborers	3	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Machinists	2	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Millers	7	.....	2 05	10	.....	.....	.....	.....	.....	.....	.....	.....
Teamsters	4	.....	1 20	10	.....	.....	.....	.....	.....	.....	.....	.....
Washers	2	.....	90	10	.....	.....	.....	.....	.....	.....	.....	.....
Weavers .....	.....	3	60	10	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 54. Total number of women employed, 6.

Bucyrus, Crawford County.

Blacksmiths	2	.....	1 50	10	4	.....	2 25	10	12	.....	2 45	10
Blacksmiths	2	.....	2 00	10	8	.....	2 09	10	8	.....	1 75	10
Bricklayers	12	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Clerks in stores	58	.....	1 25	10	.....	17	75	10	.....	.....	.....	.....
Carpenters	34	.....	2 00	10	6	.....	2 25	10	50	.....	1 75	10
Carpenters	2	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Coppersmiths	2	.....	2 00	10	6	.....	2 50	10	.....	.....	.....	.....
Dressmakers .....	.....	35	75	10	.....	.....	.....	.....	.....	.....	.....	.....
Engineers	1	.....	1 25	10	3	.....	1 75	10	3	.....	1 50	10
Engineers	1	.....	2 00	10	1	.....	2 50	10	.....	.....	.....	.....
Hod carriers	8	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Laborers	25	.....	1 50	10	8	.....	2 00	10	8	.....	1 40	10
Laborers	7	.....	1 25	10	8	.....	1 90	10	6	.....	1 00	10
Laborers .....	.....	3	60	10	.....	.....	.....	.....	.....	.....	.....	.....
Millers	5	.....	2 00	10	2	.....	2 20	10	.....	.....	.....	.....
Machine operators	40	.....	2 00	10	.....	30	60	10	.....	.....	.....	.....
Machine hands	6	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Machinists	13	.....	2 00	10	4	.....	2 50	10	65	.....	2 35	10
Moulders	2	.....	2 00	10	4	.....	2 25	10	24	.....	2 55	10
Pattern makers	2	.....	1 90	10	6	.....	2 25	10	.....	.....	.....	.....
Plasterers	15	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Painters	20	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Spinner	1	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Stone masons	6	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Tinsmiths	2	.....	1 80	10	.....	.....	.....	.....	.....	.....	.....	.....
Tailors	22	.....	1 90	10	.....	32	80	10	.....	.....	.....	.....

Total number of men employed, 524. Total number of women employed, 117.

Crestline.

Blacksmiths	6	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Bricklayers	3	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Carpenters	25	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Clerks in stores .....	.....	24	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Dressmakers .....	.....	15	75	10	.....	.....	.....	.....	.....	.....	.....	.....
Engineers	1	.....	1 25	10	1	.....	1 50	10	.....	.....	.....	.....
Hod carriers	5	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Laborers	12	2	1 25	10	1	.....	1 35	10	.....	.....	.....	.....
Millers	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Machine hands	6	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Plasterers	3	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Painters	8	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Stone masons	7	.....	2 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Tailors	7	.....	1 75	10	.....	10	80	10	.....	.....	.....	.....

Total number of men employed, 86. Total number of women employed, 51.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Gallion.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Blacksmiths	1	.....	\$2 00	10	17	.....	\$2 25	10	.....	.....	.....	.....
Bricklayers	4	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Carpenters.....	12	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Coopers.....	4	.....	*	10	.....	.....	.....	.....	.....	.....	.....	.....
Cabinet makers.....	5	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Clerks in stores.....	40	.....	1 35	10	.....	3	1 00	10	.....	.....	.....	.....
Dre-smakers .....	.....	20	60	10	.....	.....	.....	.....	.....	.....	.....	.....
Engineers	2	.....	1 75	10	1	.....	2 00	10	1	.....	\$1 50	10
Engineer	1	.....	75	10	.....	.....	.....	.....	.....	.....	.....	.....
Firemen	2	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Finishers	2	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Hod carriers.....	5	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Laborers.....	36	.....	1 25	10	6	.....	1 50	10	22	.....	1 15	10
Laborers.....	2	.....	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Machine hands.....	32	.....	1 50	10	4	.....	1 75	10	.....	.....	.....	.....
Millers.....	3	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Machinists.....	6	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Moulders	3	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Pattern maker.....	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Printers.....	4	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Plasterers	10	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Painters	12	.....	1 60	10	.....	.....	.....	.....	.....	.....	.....	.....
Stone masons.....	16	.....	2 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Tailors.....	9	.....	1 75	10	.....	12	60	10	.....	.....	.....	.....
Upholsterers.....	6	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Wheel men	60	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 329. Total number of women employed, 35.

* 10 cents per barrel.

Chagrin Falls, Cuyahoga County.

Bleachmen	8	.....	1 40	10	.....	.....	.....	.....	.....	.....	.....	.....
Bricklayers	3	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Blacksmiths	7	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Clerk	1	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Compositors	3	.....	1 67	10	.....	.....	.....	.....	.....	.....	.....	.....
Cutters .....	.....	5	85	10	.....	.....	.....	.....	.....	.....	.....	.....
Carpenters.....	7	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Clerks in stores	12	.....	1 25	10	.....	8	1 25	10	.....	.....	.....	.....
Dressmakers.....	.....	8	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Engineer	1	.....	1 37	10	.....	.....	.....	.....	.....	.....	.....	.....
Finishers	4	.....	1 37	10	.....	.....	.....	.....	.....	.....	.....	.....
Iron workers.....	40	.....	1 37	10	.....	.....	.....	.....	.....	.....	.....	.....
Laborers.....	31	.....	1 25	10	6	.....	1 50	10	.....	.....	.....	.....
Machine hands.....	10	.....	1 25	10	4	.....	1 37	10	.....	.....	.....	.....
Plasterers	4	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Painters	6	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Stone masons.....	5	.....	3 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Tailor.....	1	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 153. Total number of women employed, 21.

Cleveland.

Apprentices	6	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Artists.....	20	.....	4 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Blacksmiths	125	.....	2 50	10	301	.....	2 00	10	27	.....	2 25	10
Blacksmiths	14	.....	2 75	10	8	.....	1 80	10	36	.....	1 75	10
Blacksmiths	7	.....	1 95	10	3	.....	2 63	10	322	.....	1 50	10
Bolters.....	87	.....	2 00	10	16	.....	2 50	10	.....	.....	.....	.....
Bakers.....	44	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Book-keepers	14	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Brewers.....	170	.....	2 50	10	44	.....	2 00	10	.....	.....	.....	.....

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.
Cleveland—Continued.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Brass moulders.....	45	.....	\$2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Boys	61	.....	75	10	.....	.....	.....	.....	.....	.....	.....	.....
Brass workers	18	.....	3 00	10	16	.....	\$2 00	10	16	.....	\$1 85	10
Blanket makers .....	.....	46	90	10	34	.....	1 52	10	.....	.....	.....	.....
Box makers.....	137	.....	1 75	10	31	.....	1 50	10	21	.....	2 25	10
Boiler makers.....	21	.....	2 50	10	21	.....	2 25	10	26	.....	2 38	10
Bolt makers	70	.....	2 00	10	46	.....	2 50	10	.....	.....	.....	.....
Bricklayers	11	.....	3 50	10	3	.....	2 25	10	3	.....	4 00	10
Bricklayers	21	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Brickmakers.....	150	.....	2 35	10	8	.....	2 00	10	38	.....	1 60	10
Chisolem steel and shovel work- employees	82	.....	*1	10	.....	.....	.....	.....	.....	.....	.....	.....
Chewing-gum makers.....	51	.....	40	10	17	.....	1 60	10	.....	.....	.....	.....
Catchers	41	.....	2 50	10	111	.....	2 00	9	.....	.....	.....	.....
Carvers	17	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Curriers	39	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Clerks in stores.....	693	.....	1 90	12	.....	428	60	12	.....	.....	.....	.....
Carbon works employes.....	330	.....	*1	10	.....	.....	.....	.....	.....	.....	.....	.....
Coopers.....	95	.....	1 75	10	15	.....	2 25	10	13	.....	1 50	10
Coopers	17	.....	2 00	10	14	.....	1 85	10	.....	.....	.....	.....
Calkers	19	.....	2 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Cupolamen	2	.....	2 75	10	3	.....	1 65	10	2	.....	2 00	10
Cupolamen	20	.....	2 50	10	4	.....	2 10	10	22	.....	1 75	10
Cupolamen	3	.....	3 00	10	7	.....	1 65	10	3	.....	1 80	10
Carpenters.....	139	.....	2 50	10	121	.....	2 75	10	26	.....	2 25	10
Carpenters.....	39	.....	2 00	10	2	.....	2 62	10	53	.....	1 80	10
Carpenters.....	4	.....	1 25	10	7	.....	2 13	10	.....	.....	.....	.....
Compositors.....	372	15	*2	10	.....	.....	.....	.....	.....	.....	.....	.....
Clerks.....	12	.....	5 00	10	5	.....	4 50	10	41	.....	4 00	10
Clerks	2	.....	3 75	10	49	.....	3 50	10	39	.....	3 25	10
Clerks	89	.....	3 00	10	42	.....	2 75	10	89	.....	2 50	10
Clerks.....	45	.....	2 25	10	134	4	2 00	10	33	.....	1 90	10
Clerks.....	2	.....	1 80	10	4	.....	1 88	10	25	2	1 75	10
Clerks	2	.....	1 60	10	25	5	1 50	10	6	.....	1 40	10
Clerks	11	.....	1 25	10	24	25	1 00	10	.....	32	90	10
Cloak makers.....	26	.....	1 50	10	.....	52	1 00	14	53	.....	2 50	16
Cloak makers.....	.....	96	75	12	30	.....	2 00	12	.....	136	50	12
Cloak makers.....	.....	36	40	12	.....	36	35	12	.....	6	1 25	12
Cloak makers.....	51	.....	1 00	12	.....	12	30	12	.....	.....	.....	.....
Canners.....	522	.....	75	12	.....	.....	.....	.....	.....	.....	.....	.....
Cabinet makers.....	52	.....	2 00	10	25	.....	21	10	7	.....	2 25	10
Cabinet makers.....	6	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Core makers.....	3	.....	1 35	10	.....	2	60	10	5	.....	2 00	10
Case makers	6	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Candle makers	21	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Chain makers	24	.....	3 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Cigar makers	426	.....	1 50	10	.....	149	1 00	10	.....	.....	.....	.....
Dragouts	5	.....	1 35	10	136	.....	4 00	10	.....	.....	.....	.....
Drivers	21	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Draughtsmen.....	3	.....	4 00	10	6	.....	3 00	10	4	.....	60	10
Dressmakers.....	.....	255	1 00	10 ^{*3}	.....	.....	.....	.....	.....	.....	.....	.....
Dressmakers' apprentices.....	.....	290	40	10 ^{*4}	.....	.....	.....	.....	.....	.....	.....	.....
Engineers	18	.....	3 00	10	3	.....	4 00	10	3	.....	2 60	10
Engineers.....	7	.....	2 75	10	33	.....	2 50	10	33	.....	2 25	10
Engineers.....	4	.....	2 15	10	72	.....	2 00	10	7	.....	2 00	9½
Engineers.....	6	.....	2 25	12	2	.....	2 50	12	9	.....	1 75	10
Engineers.....	4	.....	1 85	10	4	.....	1 60	10	3	.....	1 80	10
Engineers.....	4	.....	1 33	10	3	.....	1 50	10	4	.....	1 90	10
Engineers.....	4	.....	3 33	10	.....	.....	.....	.....	.....	.....	.....	.....
Engravers.....	7	.....	3 00	10	.....	1	1 25	10	.....	.....	.....	.....
Firemen	12	.....	1 60	10	59	41	1 50	10	14	.....	2 50	10
Firemen	26	.....	1 75	10	12	.....	1 00	10	12	.....	75	10
Firemen	25	.....	2 00	10	12	.....	80	10	.....	.....	.....	.....
Fishermen.....	89	26	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....

*1 Not classified. *2 40 cents per 1,000 ems, morning papers; 35 cents evening papers.
*3 Working for themselves. *4 Work first six months for nothing.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Cleveland—Continued.

Occupation.	No. employed.		Wages per day.	Hours of labor daily.	No. employed.		Wages per day.	Hours of labor daily.	No. employed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Finishers	53		\$2 75	10	27		\$2 00	10	87		\$1 50	10
Finishers	66		1 75	10								
Foremen	105		3 00	10	37		2 00	10	11		5 00	10
Foremen	74		3 50	10	84		2 50	10	24		2 75	10
Foremen	38		2 25	10	14		3 25	10	3		3 75	10
Foremen	23		3 16	10	4		2 88	10	7		3 60	10
Foremen	51		4 00	10	6		1 00	10	2		16 00	10
Foremen	3		4 50	10	26		2 60	10	2		1 50	10
Foremen	3		2 15	10	2		1 75	10	3		3 50	7
Foremen	2		1 50	7	3		4 25	10	12		1 25	10
Foremen	3		6 00	10	7		2 30	10	6		3 40	10
Feeders	20		1 25	10								
Faggotmen	20		1 75	10	61		1 60	10				
Forgers	8		2 50	10	26		1 75	10				
File cutters	20		1 75	10								
Furnacemen	15		1 75	10								
Glass stokers	24		1 25	10								
Glaziers	34		2 00	10	13		1 50	10				
Grinders	22		2 50	10	13		1 75	10				
Hardware makers	111		2 00	10								
Heaters	31		5 25	10	166		4 25	10				
Heaters' helpers	166		1 80	10								
Helpers	540		1 50	10	34		2 25	10	63		1 60	10
Helpers	26		1 45	10	103		1 75	10	84		1 38	10
Helpers	51		1 40	10	31		1 83	10	7		1 35	10
Helpers	21		1 25	10	8		2 00	10	3		1 00	10
Inspectors	63		1 75	10	15		1 28	10				
Japanners	20	21	65	10								
Kiln hands	32	134	1 25	10								
Laborers	1,627		1 50	10	204		1 25	10	168		1 37	10
Laborers	251		1 38	10	288		1 75	10	39		2 00	10
Laborers	524		1 40	10	137		1 35	10	24		1 70	10
Laborers	12		1 87	10	358		1 30	10	37	2	75	10
Laborers	2		1 62	10	936		1 10	10				
Lake Shore Foundry employes	282		2 00	10								
Laundry hands	2		1 25	10		22	1 00	10		20	1 25	10
Metal platers	14		2 50	10	26		1 75	10	16		2 00	10
Machine hands	29		2 25	10	62		2 00	10	41		2 50	10
Machine hands	16		1 37	10								
Millers	15		2 00	10	15		3 00	10				
Machinists	442		2 50	10	33		2 10	10	385		2 25	10
Machinists	212		2 00	10	72		2 45	10	86		1 75	10
Machinists	55		2 40	10	3		2 75	10	91		1 94	10
Machinists	4		2 62	10								
Moulders	142		3 00	10	70		2 40	10	32		2 75	10
Moulders	419		2 25	10	125		1 75	10	284		2 50	10
Moulders	34		2 00	10	82		2 45	10	51		1 80	10
Moulders	46		1 00	10								
Mechanics	87		2 25	10	186		1 71	10	36		2 00	9½
Mechanics	22		1 50	10	87		2 75	10	2		4 17	10
Mixers	8		2 00	10								
Nut makers	62		1 65	10	90		2 25	10				
Night watchmen	3		1 75	10								
Nickle platers	4		2 50	10	21		1 50	10				
Oil makers	32		1 75	10	14		1 50	10				
Operators	58		1 30	10								
Officemen	5		3 50	10								
Powder makers	26		2 25	10								
Packers	14		1 50	10		6	1 00	10				
Pattern makers	13		3 00	10								
Polishers	24		3 00	10	44		2 00	10	23		75	10
Pump makers	26		2 25	10								
Plumbers	32		3 50	10								
Pipe layers	21		3 00	10								
Pipe makers	18		1 50	10								
Packers		50	75	10		3	95	10		26	85	10
Packers		4	50	10	16		2 00	10		21	80	10
Packers		5	2 00	10								

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Cleveland—Continued.

Occupation.	No. employed.		Wages per day.	Hours of labor daily.	No. employed.		Wages per day.	Hours of labor daily.	No. employed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Pop makers.....	14		\$1 50	10								
Platers.....	20		1 50	10								
Puddlers.....	46		4 00	10	311		\$3 85	10				
Puddlers' helpers.....	56		2 00	10	361		1 50	10				
Pattern makers.....	35		2 50	10	8		3 00	10	2		\$2 37 ¹ / ₂	10
Pattern makers.....	2		2 13	10	2		3 50	10	78		2 00	10
Pattern makers.....	4		2 25	10	49		2 40	10				
Pressmen.....	8		3 00	10								
Painters.....	6		2 00	10	12		2 50	10	10		1 50	10
Painters.....		31	70	10	3		3 00	10	12		2 75	10
Pointers.....	3		3 00	10								
Pant and overall makers.....		40	42	12		40	50	12				
Planing mill hands.....	22		2 00	10	102		1 75	10	4		2 25	10
Paint mixers.....	9		2 00	10	30		1 50	10	134		1 65	10
Paint mixers.....		46	75	10								
Quarry men.....	5		2 00	10								
Roofers.....	21		1 85	10								
Retort men.....	11		1 75	10								
Rollers.....	31		4 00	10	29		6 30	10	161		6 00	10
Rollers' helpers.....	36		2 25	10	311		2 00	10				
Roll turners.....	6		5 00	10	21		4 75	10				
Roughers.....	31		3 75	10	161		2 25	10				
Standard Oil Co.'s employes.....	1,318	6	*									
Soap makers.....		66	50	10	14		1 50	10	17		1 75	10
Spinners.....	13		2 50	10								
Shoe mounters.....	21		2 00	10								
Shoe testers.....	14	72	2 00	10								
Sawyers.....	15		2 50	10	12		3 00	10				
Sewers.....		22	75	10								
Shaft makers.....	24		1 50	10								
Shearmen.....	21		2 00	10	30		1 80	10				
Shearmen helpers.....	36		1 50	10	311		1 40	10				
Scrapers.....	36		1 50	10								
Shippers.....	4		2 00	10								
Stone polishers.....	6	4	2 00	10								
Straighteners.....	7		1 40	10	76		1 30	10				
Stranders.....	111		1 40	10								
Sorters.....	64		1 75	10		111	1 00	10	9		2 00	10
Sorters.....		91	85	10		92	70	10				
Still men.....	4		2 00	10								
Stone cutters.....	3		3 00	10	18		2 50	10				
Ship builders.....	69		2 50	10	3		1 50	10	3		1 60	10
Ship builders.....	316		1 75	10								
Stove mounters.....	56		1 75	10								
Superintendents.....	4		5 00	10								
Tanneries employes.....	71		*	10								
Tool makers.....	16		3 00	10								
Tinners.....	6		1 75	10	41		1 50	10	66		2 00	10
Trimmers.....	3		1 08	10	12		1 75	10				
Transferers.....	7		3 00	10		1	1 25	10				
Teamsters.....	118		1 75	10	61		1 40	10	106		2 00	10
Teamsters.....	125		1 60	10	76		1 50	10	5		2 25	10
Tailors.....	241		2 00	10	2		1 50	10	3		1 75	10
Tailors.....		5	85	10		20	75	10		20	50	10
Trunk makers.....	61		2 00	12								
Target makers.....	9		3 00	10								
Varnishers.....	46		2 00	10		21	90	10				
Woolen mill employes.....	1,220		*	10								
Woodworkers.....	44		2 00	10	15		2 50	10				
Wire drawers.....	262		2 00	10								
Wheelwrights.....	18		1 50	10								
Watchmen.....	26		2 00	12	19		1 50	12	9		1 75	12
Watchmen.....	5		1 90	12	2		2 50	12	8		1 60	12
Watchmen.....	2		1 65	12								
Wagon makers.....	3		2 25	12								

* Wages not given.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Cleveland—Concluded.

Occupation.	No. employed.		Wages per day.	Hours of labor daily.	No. employed.		Wages per day.	Hours of labor daily.	No. employed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Wipers.....	4	.....	\$ 90	10	.....	.....	.....	.....	.....	.....	.....	.....
White lead makers	46	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Warehouse men.....	9	.....	2 50	10	4	.....	\$1 80	10	10	.....	\$1 75	10
Warehouse men.....	5	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Yardmen	7	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 2,002. Total number of women employed, 2,597.

Greenville, Darke County.

Blacksmiths	3	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Engineers.....	1	.....	1 00	10	2	.....	1 50	10	.....	.....	.....	.....
Foreman.....	1	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Factory men.....	10	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Helper.....	1	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Laborers.....	9	.....	1 25	10	14	.....	1 00	10	.....	.....	.....	.....
Miller	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Machine hands	11	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Woodworkers	5	.....	1 50	.....	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 58.

Defiance, Defiance County.

Apprentices	6	.....	63	10	.....	.....	.....	.....	.....	.....	.....	.....
Book-keepers	3	.....	1 00	10	.....	1	1 25	10	1	.....	2 15	10
Book-keepers	1	.....	2 10	10	3	.....	3 33	10	1	.....	1 25	10
Book-keepers	11	.....	1 22	10	.....	.....	.....	.....	.....	.....	.....	.....
Brewers.....	2	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Blacksmiths	3	.....	2 00	10	3	.....	2 35	10	4	.....	1 50	10
Blacksmiths	16	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Boiler makers.....	18	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Borers	2	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Carpenters.....	3	.....	1 90	10	5	.....	1 85	10	.....	.....	.....	.....
Cabinet men.....	4	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Cigarmaker.....	1	.....	83	9	.....	.....	.....	.....	.....	.....	.....	.....
Clerks in stores	113	.....	1 63	10	.....	65	83	10	.....	.....	.....	.....
Draughtsmen.....	2	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Drivers	3	.....	1 50	10	1	.....	1 35	10	.....	.....	.....	.....
Exchanger.....	1	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Engineers	2	.....	2 00	10	4	.....	1 50	10	1	.....	3 00	10
Engineers.....	1	.....	1 66	10	2	.....	1 60	10	.....	.....	.....	.....
Editors	1	.....	2 50	10	1	.....	3 50	10	1	.....	2 00	10
Firemen	2	.....	1 50	10	2	.....	1 66	10	.....	.....	.....	.....
Foremen.....	6	.....	2 00	10	1	.....	2 25	10	1	.....	1 25	10
Foremen.....	1	.....	2 15	10	2	.....	1 75	10	1	.....	2 10	10
Finishers	1	.....	1 75	10	2	.....	2 25	10	.....	.....	.....	.....
Helpers	1	.....	1 00	10	12	.....	50	10	30	.....	1 22	10
Helps	59	.....	75	10	1	.....	40	10	3	.....	60	10
Helpers	1	.....	87	10	.....	.....	.....	.....	.....	.....	.....	.....
Heaters' tenders.....	2	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Hoopers.....	3	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Hoopers' coilers.....	2	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Jointers	2	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Knitters .....	.....	16	66	10	.....	10	50	10	.....	40	45	10
Knitters .....	.....	4	41	10	.....	.....	.....	.....	.....	.....	.....	.....
Laborers.....	25	.....	1 50	10	247	.....	1 25	10	3	.....	1 15	10
Laborers.....	13	.....	1 10	10	25	.....	1 00	10	9	.....	50	10
Laborers.....	11	.....	1 35	10	.....	.....	.....	.....	.....	.....	.....	.....
Manager.....	1	.....	4 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Machinists.....	3	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Machine tenders.....	2	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Master mechanic	1	.....	5 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Moulders	19	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Millers.....	1	.....	3 33	10	2	.....	1 80	10	4	.....	1 70	10
Machine men.....	22	.....	1 50	10	6	.....	1 60	10	8	.....	1 75	10

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Defiance—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Machine men	20		\$1 40	10	20		\$1 35	10	4		\$1 66	10
Machine men	2		1 25	10								
Off-bearers	3		1 25	10								
Oiler	1		1 30	10								
Presidents	1		5 00	10	1		1 75	10				
Packers	2		1 25	10	2		1 50	10				
Pattern makers	5		2 25	10								
Printers	2		1 25	10	3		1 50	10		2	83	10
Printers	3		1 00	10								
Painters	3		1 50	10	2		1 75	10	15		2 00	10
Painters	1		1 00	10								
Stave cutters	2		2 50	10	1		3 00	10				
Salesmen	2		3 00	10	3		2 50	10				
Stripper	1		34	9								
Spokemen	3		1 25	10								
Sawyers	1		2 50	10	2		1 50	10	1		2 35	10
Sawyers	1		2 00	10	1		1 25	10	2		1 40	10
Sawyers	1		1 35	10								
Shipping clerk	1		2 15	10								
Scourers	6		1 13	10								
Secretaries	1		4 00	10	1		8 00	10				
Superintendents	1		8 00	10	2		4 00	10				
Treasurer	1		3 50	10								
Turners	1		1 60	10	1		1 25	10	2		1 10	10
Turners	1		1 50	10	1		2 50	10				
Trimmers	2		3 00	10	2		3 25	10				
Type writers		2	1 25	10								
Type setters		3	1 00	10								
Teamsters	2		1 45	10	2		1 25	10				
Wagon makers	11		2 25	10								
Woodworkers	1		2 00	10	5		1 50	10				
Watchmen	3		1 25	10								
Yardmen	5		1 25	10								

Total number of men employed, 920. Total number of women employed, 143.

Delaware, Delaware County.

Apprentice	1		1 16	10								
Assistant book-keeper	1		3 00	10								
Bunch rollers		17	*1	10	4		2 50	10				
Bunch breakers		2	*2	9		4	*3	9		2	*4	9
Box makers	3		1 50	10		7	1 00	10				
Back tenders	6		80	12								
Brewers	1		4 00	10	1		2 50	10				
Book-keepers	2		2 00	12	1		4 33	12				
Blacksmiths	4		2 00	10	1		2 50	10				
Carpenters	1		1 60	10	13		1 75	10	21		2 50	10
Coopers	5		1 66	10								
Cigarmakers	18		2 00	9	24		2 08	9		10	80	9
Cutters	21		1 50	10	21		1 25	10		6	75	10
Cutters	2		50	10		2	50	10				
Chair makers	90		1 00	10								
Drivers	5		1 25	10	3		1 50	10	1		2 50	10
Drivers	1		50	10	3		1 00	10				
Engineers	2		1 00	10	7		1 50	10	3		1 25	10
Engineers	2		1 75	12	2		1 25	12				
Foremen	2		2 50	10	2		2 67	10	1		1 50	10
Foremen	4		2 00	10	1		1 75	10				
Finishers	2		1 50	10	1		75	10		2	1 00	10
Firemen	3		1 00	12								
Girls		21	60	9								
Helpers	8		1 25	10	1		75	10	2		1 50	10
Helpers	4		1 00	10	8		1 10	10				

*1 \$3 per thousand. *2 \$1 per thousand. *3 80 cents per thousand. *4 70 cents per thousand.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Delaware—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Ironers	8		\$ 83	10	1		\$2 00	10				
Journeyman	1		1 66	10								
Laborers	7		2 50	10	37		1 50	10	33		\$ 50	9
Moulders	2		2 50	10								
Machinemmen	5		2 25	10	7		2 00	10				
Mechanic	1		2 50	10								
Machinist	1		2 50	10								
Millers	4		2 00	10								
Off-bearer	1		1 50	10								
Packers	7		50	10	4		1 00	10				
Porters	2		1 83	9	1		1 67	9				
Painters	2		2 00	10								
Rag men	2		1 00	10	1		1 35	10		15	*5	
Rag men		1	67	10								
Rag cutters	1		1 50	10	1		1 15	10				
Retailer	1		2 50	10								
Roustabouts	2		1 25	12								
Sawyer	1		2 00	10								
Strippers	8		40	9		2	48	9		1	*6	9
Strippers		10	*7	9		3	*8	9		3	*9	
Sorters		2	90	9		1	80	9				
Superintendent	1		3 00	10								
Trimmer	1		2 00	10								
Utility boys	1		83 ¹ ₃	9	2		63 ² ₃	9	3		50	9
Washman	1		66	10								

Total number of men employed, 449. Total number of women employed, 111.

*5 15 cents per pound. *6 1¹/₄ cents per pound. *7 1¹/₂ cents per pound. *8 3 cents per pound.
*9 4 cents per pound.

Sandusky, Erie County.

Apprentices	16		85	10	7		50	10	1		1 50	10
Brewers	1		5 00	10	4		2 00	10				
Book-keepers	1		3 00	10	1		2 50	10	60		2 00	10
Book-keepers		1	1 25	10	5		2 75	10	2		3 33	10
Book-keeper	1		3 50	10								
Boiler makers	8		2 10	10	7		2 25	10	7		2 20	10
Blacksmiths	22		1 75	10	13		2 00	10				
Binders	2		2 25	10		1	75	10				
Benders	8		*1	10								
Bleachmen	4		1 50	10								
Bricklayers	20		2 25	10								
Cellar man	1		2 00	10								
Car repairers	5		1 50	10								
Captains	2		3 35	10	1		3 00	10				
Cooks	1		1 25	10		2	84	10				
Carpenters	10		1 25	10	15		1 50	10	19		1 65	10
Carpenters	35		1 60	10	45		2 00	10				
Cabinet makers	11		2 50	10								
Coopers	29		1 85	10	30		1 75	10	25		2 50	10
Coopers	13		2 00	10								
Cariders	5		1 00	10	8		25	10				
Cutters		4	65	10								
Clerks in stores	125		1 50	10		60	1 00	10				
Deck hands	3		1 50	10								
Draughtsmen	2		2 00	10								
Dressmakers		50	65	10								
Derrick men	13		1 45	10								
Engineers	2		1 85	10	4		1 50	10	5		2 00	10
Engineers	1		2 25	10	3		1 75	10	2		2 50	10
Engineers	1		1 25	10	4		2 75	10				

*1 5 cents per set.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Sandusky—Continued.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	W. men.			Men.	Women.			Men.	Women.		
Editors	2		\$2 50	10								
Feeder.....	1			10								
Fishermen.....	93		2 00	10	10		\$1 75	10	26		\$1 00	10
Firemen.....	2		1 50	10	1		2 15	10	1		1 35	10
Fireman.....	1		1 75	10								
Finishers (wheel).....	25		1 50	9	25		*2	9	2		1 25	12
Fish dressers.....	27		2 00	10								
Foremen.....	13		2 50	10	6		1 25	10	2		3 50	10
Foremen.....	1		1 50	10	1		1 65	10	1		6 66	10
Foremen.....	2		3 00	10	3		2 75	10	1		2 90	10
Foremen.....	7		2 00	10	3		2 25	10				
Hod carriers.....	25		1 50	10								
Helpers	3		1 65	10	4		75	10	6		40	10
Helpers.....	5		1 00	10	28		1 15	10	40		1 25	10
Helpers.....	27		50	10	1		67	10	3		90	10
Helpers.....	35		1 50	10	21		70	10	3		95	10
Laborers.....	15		1 35	10	45		85	10	97		1 40	10
Laborers.....	19		1 23	10	10		1 46	10	464		1 50	10
Laborers.....	23		1 15	10	27		1 00	10	3		45	10
Laborers.....	9		50	10		14	50	10	3		1 60	10
Laborers.....	230		1 25	10	137		2 00	10	58		1 75	10
Mailers	2		1 10	10								
Managers	1		3 00	10	2		3 50	10	2		5 00	10
Manager.....	1		4 00	10								
Machine men	110		1 00	10	2		1 75	10	6		1 50	10
Machine men.....	2		2 00	10								
Millwrights	20		2 00	10								
Mechanics.....	4		2 00	10								
Master mechanic.....	1		5 00	10								
Miller	1		2 00	10								
Measurers ..	5		1 35	9	3		1 60	10				
Machinists.....	75		1 75	10	20		1 25	10	37		2 00	10
Moulders	37		2 00	10								
Mates	1		2 00	10	3		2 25	10				
Office help.....	7		2 00	10	1		1 35	10	3		1 60	
Pipe layers.....	2		1 50	10								
Pattern makers.....	10		2 00	10	1		2 50	10				
Pressmen	2		2 00	10	1		1 75	10				
Plasterers.....	25		2 00	10								
Plumbers	8		2 50	10								
Printers	6		1 25	10		2	75	10	5		1 50	10
Painters	8		1 10	10	1		2 00	10	8		1 60	10
Painters	32		1 75	10								
Packers		6	75	10	20		1 75	10				
Quarry men.....	15		2 00	10	1		1 75	10	4		1 60	10
Quarry men.....	3		1 35	10	2		1 50	10				
Riveters ..	2		55	10								
Spoke polishers.....	15		*3	10								
Spoke turners	3		*4	10								
Spoke drivers.....	5		*5	10								
Strippers.....	2		50	10	5		40	10				
Stone masons.....	21		2 25	10								
Shipping clerks.....	9		1 25	10								
Superintendents.....	1		3 50	10	1		3 00	10	1		1 85	10
Sawyers.....	1		2 25	10	2		1 75	10	1		1 50	10
Salesmen	2		2 75	10	1		2 50	10	5		3 00	10
Salesmen	1		4 00	10	1		3 50	10	4		3 35	10
Secretaries.....	1		1 85	10	1		2 00	10				
Stave cutters.....	2		2 50	10								
Skilled men.....	20		2 25	10								
Treasurer.....	1		1 65	10								
Tinsmiths	3		2 25	10								
Trimmers.....	1		3 00	10	2		1 75	10				
Teamsters.....	10		1 50	10	5		1 25	10	53		1 10	10
Teamsters.....	10		2 00	10	2		1 40	10	4		1 35	10

*2 4½ cents per set. *3 32 cents per 100. *4 5 cents per set. *5 7 cents per set.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Sandusky—Concluded.

Occupation.	No. employed.		Wages per day.	Hours of labor daily.	No. employed.		Wages per day.	Hours of labor daily.	No. employed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Time keeper.....	1		\$1 25	10								
Turners.....	7		1 50	10								
Tailors.....	20		2 50	10								
Upholsterers.....	2		1 75	10								
Wheel runners.....	7		*6	10								
Wheel makers.....	4		2 50	10	10		\$2 00	10	30		\$1 50	10
Wheel makers.....	60		1 10	10								
Washers.....	4		1 25	10	1		1 87	10	1		1 75	10
Woodworker.....	1		2 00	10								
Yard help.....	3		1 25	10								

Total number of men employed, 3,035. Total number of women employed, 140.

*6 4½ cents per set.

Lancaster, Fairfield County.

Apprentices.....	10		75	10	17		65	10				
Boiler makers.....	2		2 30	10								
Bricklayers.....	7		2 25	10								
Book-keepers.....	1		50	10	1		1 50	10	1		1 25	10
Brewer.....	1		1 87	10								
Blacksmiths.....	7		1 60	10	9		2 00	10	3		2 30	10
Blacksmiths.....	4		1 80	10								
Collector.....	1		1 70	10								
Carpeters.....	11		2 25	10	17		2 00	10	13		1 75	10
Cutters.....	4		3 33	10	4		4 00	10				
Coat makers.....		20	1 00	10		20	1 16	10		26	1 50	10
Clerks.....		20	60	10	40		1 25	10	2		3 00	10
Clerks.....	3		2 33	10	3		2 25	10	3		2 00	10
Cellarmen.....	2		1 75	10								
Core makers.....	4		1 25	10								
Coppersmith.....	1		2 00	10								
Car inspectors.....	7		1 60	10								
Cleaners.....	7		1 10	10								
Dress-makers.....		8	75	10								
Drivers.....	4		1 60	10	2		1 90	10				
Editors.....	1		2 50	10	4		3 00	10				
Engineers.....	1		1 00	10	6		1 50	10	1		1 40	10
Engineers.....	20		3 00	10								
Firemen.....	20		1 85	10								
Foremen.....	2		2 40	10	5		2 50	10				
Helpers.....	2		1 00	10	6		1 25	10	3		35	10
Hod carriers.....	8		1 50	10								
Ironers.....	5		75	10								
Laborers.....	24		1 10	10	11		1 50	10	26		1 25	10
Laborers.....	2		1 00	10								
Machine hands.....	2		84	10	2		1 75	10				
Moulders.....	30		2 25	10								
Machinists.....	18		2 25	10	28		1 80	10	7		2 30	10
Millers.....	2		2 00	10								
Printers.....	10		1 50	10	8		1 75	10				
Plumbers.....	2		2 25	10								
President.....	1		2 00	10								
Paint makers.....		29	84	10		51	1 00	10				
Pattern maker.....	1		3 00	10								
Pumper.....	1		1 75	10								
Painters.....	17		2 00	10	23		1 50	10				
Plasterers.....	8		2 00	10								
Store keeper.....	1		1 00	10								
Superintendent.....	1		3 00	10								
Salesmen.....	2		3 50	10	2		1 80	10	4		3 33	10
Salesmen.....	2		2 25	10								
Stone masons.....	9		2 25	10								
Secretary and managers.....	1		5 00	10	1		2 50	10				
Spinner.....	1		2 00	10								

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.
Lancaster—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Solicitors	3		\$1 75	10								
Tailors	13		2 00	10	10		\$3 50	10	17		\$2 50	10
Trimmer.....	1		2 50	10								
Tinner.....	1		1 66	10								
Vise hands	6		1 10	10								
Vest makers		37	1 00	10								
Weavers	2		1 50	10								
Watchmen.....	1		1 25	10	3		1 75	10	1		1 00	10
Woodworkers.....	2		1 80	10	19		1 50	10				
Wipers.....	12		1 00	10								

Total number of men employed, 619. Total number of women employed, 203.

Washington, Fayette County.

Apprentices	1		85	10								
Bricklayers	14		3 00	10								
Blacksmiths	24		2 00	10								
Book-keepers	2		2 50	10								
Carpenters	26		2 00	10	31		2 25	10	1		1 25	10
Clerks in stores.....	175		1 25	10								
Carriers.....	7		20	6								
Collector.....	1		1 50	10								
Compositors.....	6		1 50	10	2		1 65	10	1		2 00	10
Dress-makers.....		30	75	10								
Engineers.....	3		1 25	10	3		1 50	10	1		3 00	10
Foremen.....	1		1 25	10	2		3 00	10	1		2 00	10
Foremen.....	1		2 25	10	2		2 50	10				
Helpers.....	4		1 00	10								
Hod carriers.....	20		1 25	10								
Laborers.....	3		1 25	10	1		84	10	15		1 00	10
Local editor	1		2 56	10								
Millers.....	2		2 00	10	1		1 25	10				
Millwright.....	1		2 00	10								
Machinists.....	2		2 50	10								
Moulders	5		2 50	10								
Painters	55		2 00	10								
Plasterers	12		2 00	10								
Press feeder.....	1		75	10								
Reporter.....	1		1 75	10								
Shoemakers	7		1 50	10								
Seamstress		1	84	10								
Salesmen	3		1 75	10								
Street laborers	40		1 25	10								
Stone masons.....	9		2 50	10								
Tailors	20		2 00	10								
Tinner.....	1		2 00	10								
Trimmers	3		2 00	10								
Weighmaster	1		1 25	10								
Wrappers		3	50	10								
Woodworkers.....	3		2 00	10								
Yardman	1		1 67	10								

Total number of men employed, 517. Total number of women employed, 34.

Columbus, Franklin County.

Apprentices	9		1 20	10	3		1 30	10	1		1 25	10
Apprentic-s	32	15	75	10	1		2 00	10	2		1 10	10
Apprentices	39	10	50	10	131	145	25	10	10		58	10
Apprentices	3		1 00	10	7		1 40	10	1	65	87	10
Apprentices	1		1 50	10	9	4	67	10	4		80	10
Apprentices	10		85	10	9	3	84	10	11		1 17	10
Apprentices	1		1 66	10								
Blacksmiths	4		1 50	10	31		2 25	10	55		1 75	1

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Columbus—Continued.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Blacksmiths	74		\$2 50	10	44		\$2 00	10	64		\$1 40	10
Blacksmiths	1		2 75	10	1		1 65	10	25		2 25	10
Blacksmiths	2		1 10	10	1		3 00	10				
Bricklayers	9		4 00	10	43		3 50	10	40		2 75	10
Bricklayers	6		2 25	10	102		3 00	10				
Boiler makers	6		2 25	10	3		3 00	10	13		2 50	10
Boiler makers	14		2 30	10	8		1 90	10				
Book-keepers	10		3 00	10	14		2 00	10	4		2 50	10
Book-keepers	1		1 25	10	1		1 17	10	6		1 10	10
Book-keepers	1		5 00	10	3		3 33	10	1		2 89	10
Book-keepers	1		96	10	1		1 15	10	8		4 00	10
Book-keepers	1		2 75	10	1		88	10	1		1 75	10
Book-keepers	2		1 50	10	1		1 00	10	1		2 88	10
Book-keepers	2		2 50	10	1		2 17	10				
Burnishers	11		2 00	10								
Brick burners	13		1 50	10								
Brick setters	10		6 00	10								
Blowers		12	85	10								
Box paperers	8		1 85	10								
Bench hands	1		1 37	10								
Bleacher	1		75	10								
Back tender	1		1 25	10	1		2 00	10				
Bottlers	23		2 00	10	56		1 50	10				
Brewers	1		2 50	10	6		2 25	10	10		1 50	10
Bakers	6		1 75	10								
Bakers		3	1 50	10		1	1 00	10	8		3 00	10
Binders	7		2 00	10								
Box maker	1		1 50	10								
Basket makers	1		2 00	9	2		1 75	9	1		1 50	9
Basket makers	1		1 00	9								
Broom makers	5		1 25	10	19		1 50	10	2		1 50	8
Broom makers	10		1 75	10	9		2 00	10				
B dy makers	16		2 25	10								
Compositors	161		*1	10		4	83	10		4	1 00	10
Compositors	2	5	50	10	5		1 50	10	2		2 00	10
Cabinet makers	101		2 00	10	4		2 15	10	3		1 75	10
Cabinet makers	6		75	10								
Core makers	3		1 70	10								
Coppersmiths	1		2 83	10	1		1 75	10				
Casket makers		6	1 12	10								
Carvers	1		2 67	10	3		3 00	10		3	75	10
Chair makers	1		1 80	10	7?		1 72	10	2		2 00	10
Cupola tenders	2		1 50	10	1		1 75	10				
Candy makers	3	4	1 17	10	12		1 35	10	3	23	1 00	10
Carpenters	202		2 00	10	159		1 75	10	145		1 90	10
Carpenters	105		1 50	10	135		2 25	10	145		1 60	10
Carpenters	24		1 25	10	110		2 10	10	85		2 50	10
Carpenters	2	19	75	10	11		1 75	10	1	5	36	10
Clerks in offices	10		1 71	10	26		1 50	10	10		1 95	10
Clerks in offices	4	8	1 20	10	4		4 00	10	15		3 00	10
Clerks in offices	1	12	50	10	1		1 66	10	4		2 50	10
Clerks in offices	1		1 17	10	5	13	1 00	10	54		2 00	10
Clerks in offices	1		5 00	10	8		2 10	10	2	7	3 34	10
Clerks in offices	1		1 25	10		3	1 10	10	1	4	1 67	10
Car inspectors	19		1 50	10	15		1 65	10	15		1 30	10
Car oilers	6		1 40	10								
Car repairers	41		1 30	10	28		1 50	10				
Car builders	101		1 75	10								
Chisel forgers	2		*2									
Catchers	2		1 50	10								
Cigar makers	58	10	1 75	10	9		1 20	10	26		1 50	8
Cleaners	10		1 50	10	2	5	50	10	2		1 70	10
Cleaners	64		1 20	10	3		1 75	10	3	11	75	10
Drivers	3		1 17	10	6		2 00	10	3		1 40	10

*1 Night work, 35 cents per 1,000 ems; day work, 23 cents. *2 37 cents per dozen.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Columbus—Continued.

Occupation.	No. employed.		Wages per day.	Hours of labor daily.	No. employed.		Wages per day.	Hours of labor daily.	No. employed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Drivers	16		\$1 25	10	17		\$1 75	10	6		\$1 67	10
Drivers	10		1 50	10	3		1 00	10	14		1 20	10
Drivers	1		50	10	16		1 80	10	1		1 30	10
Drivers	9		1 33	10	49		3 00	10				
Designers	1		4 15	10	3		3 00	10				
Dusters		2	1 50	10		6	1 00	10				
Draughtsmen	1		2 00	10	1		2 14	10	3		1 50	10
Drill-press hands	67		1 50	10								
Dash makers	2		1 50	10								
Drop hammerer	1		1 00	10								
Dressmakers	3	661	*3	10								
Dryouts	2		1 60	10								
Dampners		4	85	10		5	65	10				
Enters	10		3 00	10	4		2 50	10				
Engineers	4		2 20	10	10		1 50	10	6		2 25	10
Engineers	13		2 00	10	1		1 17	10	2		1 85	10
Engineers	10		1 75	10	13		1 66	10	2		2 80	10
Engineers	1		2 12	10	100		2 50	10	2		1 95	10
Engineers	4		1 80	10								
Edge setter	1		2 15	10								
Emory wheelers	2		1 25	10								
Finishers	39		1 46	10	39		2 50	10	3		1 75	10
Finishers	17		1 50	10	8		2 40	10	7	15	75	10
Finishers	25	12	1 00	10	12		3 00	10	21		2 25	10
Finishers	59		1 65	10	14		1 50	10	1		1 37	10
Fitting-up men	4		1 75	10	7		2 00	10	4		1 50	10
Furnace men	5		2 50	10								
Firemen	89		1 50	10	9		1 20	10	4		1 67	10
Firemen	12		2 70	10	3		1 25	10				
Foremen	1		1 17	10	3		3 33	10	2		1 00	10
Foremen	1		2 87	10	17		3 00	10	26		2 50	10
Foremen	18		2 00	10	2		3 50	10	1		1 50	10
Foremen		4	75	10	6		2 25	10	4		4 00	10
Foremen	3		2 65	10	3		3 25	10	18		3 15	10
Foremen	4		4 25	10	3		4 49	10	6		4 81	10
Foremen	3		2 75	10		2	1 27	10	3		3 80	10
Foremen	3	5	1 00	10	3		3 85	10	3		4 40	10
Foremen	7		2 00	10	6		2 63	10	5		3 75	10
Foremen	3		5 00	10	7		1 75	10				
Flatteners	2		5 00	10								
Fillers	19		1 50	10								
File forgers	2		2 50	10								
File grinder	1		2 25	10								
File cutters	17		2 25	10								
Folders		15	75	10	1	12	1 00	10	1	7	1 25	10
Feeders	4		1 25	10	1		1 00	10				
Foundry hands	35		1 61	10								
Gatherers	9		6 00	10								
Gas fitters	4		2 50	10								
Grinders	4		1 50	10	9		1 25	10				
Greasers	127		2 00	10	31		1 85	10				
Glass cutters	4		1 50	10								
Hammermen	10		2 00	10								
Helpers	18		75	10	46		1 00	10	28		1 25	10
Helpers	75		1 50	10	11		66 ² ₃	10	49		50	10
Helpers	77		1 45	10	6		1 60	10	3		1 37	10
Helpers	11		1 40	10	18		60	10	13		70	10
Helpers	14		1 75	10	7		1 17	10	3		1 85	10
Heelers	9		3 00	10								
Hand workers	9		15†	12								
Hangers	3		1 45	10								
Hat makers	1		3 00	10		1	1 50	10				
Ham makers	37		1 20	10								

*3 It is difficult to obtain the wages of dressmakers or the hours they work. On entering a shop they work six months for nothing, while they are learning the trade. They then get \$2 a week. As they progress, wages advance; \$7 a week is the best wages paid.

† Per dozen.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Columbus—Continued.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Heaters	3	.....	\$5 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Heat rs' helpers.....	3	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Hod carriers.....	350	.....	*1	10	.....	.....	.....	.....	.....	.....	.....	.....
Harness makers.....	10	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Hook-up.....	1	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Ironers .....	.....	18	75	10	.....	24	\$1 00	10	.....	.....	.....	.....
In agricultural works.....	119	.....	*2	.....	.....	.....	.....	.....	.....	.....	.....	.....
Janitor.....	1	.....	1 29	10	.....	.....	.....	.....	.....	.....	.....	.....
Knitters.....	.....	40	*3 85	12	.....	.....	.....	.....	.....	.....	.....	.....
Keeper.....	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Labo.ers.....	145	.....	1 30	10	98	.....	1 75	10	337	.....	\$1 40	10
Laborers.....	8	.....	1 35	10	89	.....	1 00	10	.....	5	65	10
Laborers.....	.....	3	60	10	.....	6	85	10	12	.....	1 33	10
Laborers.....	1	8	75	10	17	.....	1 65	10	240	.....	1 20	10
Laborers.....	110	.....	2 00	10	7	.....	1 60	10	17	.....	90	10
Lime keepers.....	1	.....	65	10	2	.....	1 00	10	14	.....	1 20	10
Lamp makers.....	8	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Lathers.....	50	.....	*4 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Laundry laborers.....	4	8	50	10	6	8	75	10	.....	.....	.....	.....
Machinists.....	7	.....	1 61	10	58	.....	1 75	10	23	.....	1 50	10
Machinists.....	78	.....	2 15	10	61	.....	2 00	10	21	.....	2 25	10
Machinists.....	9	.....	2 75	10	10	.....	2 60	10	17	.....	2 40	10
Machinists.....	10	.....	1 41 ²	10	13	.....	2 20	10	13	.....	3 00	10
Machinists.....	39	.....	2 50	10	1	.....	2 60	10	.....	.....	.....	.....
Mounters.....	7	.....	2 25	10	12	.....	2 00	10	.....	.....	.....	.....
Millwright.....	1	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Moulders.....	104	.....	2 25	10	17	.....	2 75	10	29	.....	2 50	10
Moulders.....	35	.....	1 75	10	60	.....	1 80	10	8	.....	2 00	10
Managers.....	1	.....	11 00	10	12	.....	3 00	10	1	.....	14 00	10
Managers.....	1	.....	7 00	10	4	.....	5 00	10	1	.....	1 75	10
Managers.....	2	.....	2 50	10	4	.....	3 33	10	2	.....	2 00	10
Mechanics.....	29	.....	1 50	10	9	.....	2 25	10	20	.....	2 00	10
Markers.....	.....	4	1 00	10	.....	2	75	10	.....	.....	.....	.....
Mill hands.....	2	.....	2 00	10	2	.....	1 25	10	.....	.....	.....	.....
Masters.....	4	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Machine hands.....	137	.....	1 35	10	114	.....	1 85	10	13	.....	2 00	10
Machine hands.....	.....	14	33 ¹	10	20	.....	1 90	10	6	.....	1 50	10
Machine hands.....	11	15	1 00 ³	10	16	.....	2 25	10	17	.....	1 60	10
Machine hands.....	34	.....	1 75	10	10	.....	2 50	10	10	.....	1 25	10
Milers.....	5	.....	2 39	11	3	.....	2 00	11	.....	.....	.....	.....
Nut makers.....	3	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Nailer.....	1	.....	2 05	10	.....	.....	.....	.....	.....	.....	.....	.....
Plumbers.....	9	.....	1 25	10	16	.....	3 00	10	73	.....	2 50	10
Pressmen.....	16	.....	2 00	10	1	.....	2 66	10	1	.....	1 75	10
Pressmen.....	5	.....	1 00	10	1	.....	3 33	10	1	.....	2 25	10
Pressmen.....	2	.....	1 25	10	3	.....	2 50	10	1	.....	50	10
Pressmen.....	8	.....	1 66	10	.....	.....	.....	.....	.....	.....	.....	.....
Plane makers.....	11	.....	1 85	10	.....	.....	.....	.....	.....	.....	.....	.....
Pipe makers.....	3	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Pi e makers.....	1	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Pillar men.....	4	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Polishers.....	2	.....	1 75	10	3	.....	2 00	10	.....	.....	.....	.....
Pattern makers.....	12	.....	2 60	10	12	.....	2 25	10	14	.....	2 00	10
Pattern makers.....	14	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Packers.....	3	7	1 00	10	4	1	1 10	10	.....	1	43	10
P.ckers.....	3	10	85	10	13	.....	1 44	10	9	6	1 17	10
Packers.....	.....	4	50	10	5	.....	1 50	10	1	.....	1 34	10
Packers.....	15	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Painters and paper hangers.....	70	.....	2 00	10	37	.....	1 50	10	41	.....	2 25	10
Painters and paper hangers.....	12	.....	1 63	10	44	.....	1 75	10	61	.....	1 90	10
Painters and paper hangers.....	12	.....	1 62	10	19	.....	1 20	10	23	.....	1 91	10
Painters and paper hangers.....	19	.....	1 95	10	40	.....	1 66	10	.....	24	98	10
Pattern filers.....	1	.....	2 25	10	1	.....	2 00	10	.....	.....	.....	.....
Puddlers.....	14	.....	5 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Puddle s' helpers.....	14	.....	2 75	10	.....	.....	.....	.....	.....	.....	.....	.....

*1 \$2.25 at 10 hours daily, in summer; \$1.75 at 8 hours in winter. *2 Convicts. *3 Per dozen.
*4 Per 1,000.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Columbus—Continued.

Occupation.	No. employed.		Wages per day.	Hours of labor daily.		No. employed.		Wages per day.	Hours of labor daily.		No. employed.		Wages per day.	Hours of labor daily.
	Men.	Women.				Men.	Women.				Men.	Women.		
Pokeins	2		\$1 25	10										
Plasterers	149		2 25	10										
Rag assorters		7	2 50	12										
Renderer	1		2 50	10										
Rollers	1		85	10		1		\$1 25	10		3		\$6 75	10
Reporters	3		2 50	10										
Ruler	1		3 00	10										
Roughers	6		2 80	10										
Shoemakers	40		2 25	10		22		2 00	10		17		1 75	10
Salesmen	10		5 00	10		25		3 60	10		31		2 00	10
Salesmen	3		1 00	10		10		1 50	10		6		4 00	10
Salesmen	1		2 25	10		3		2 80	10		1		3 04	10
Salesmen	3		3 85	10		4		1 85	10		3		1 66	10
Shoe fitters		40	1 25	10			6	60	10		2		1 75	10
Shoe fitters	3		2 10	10		11		1 00	10					
Shearer	1		2 25	10										
Sail makers	2		3 00	10										
Stock breakers	9		1 85	10										
Starchers		16	1 00	10			10	85	10					
Sorters	2	4	1 25	10										
Seat makers	3		2 00	10										
Switchmen	6		1 61	10										
Stove makers	4		1 75	10		2		1 50	10					
Steam fitters	6		3 00	10										
Sewing girls		14	1 08	10			24	85	10			14	75	10
Shoe cutters	7		3 00	10		1		2 50	10		3		2 25	10
Shoe cutters		5	70	10			3	83	10					
Shoe lasters	9		3 00	10		5		1 50	10		7		2 18	10
Solderers	2		2 20	10										
Stokers	16		2 10	10										
Solicitors	3		3 00	10		5		2 00	10		6		1 75	10
Straighteners	1		42†			3		1 00	10					
Skilled men	11		2 00	10										
Stock-room hands	20		1 50	10		14	6	1 25	10		8	10	1 00	10
Stable men	10		1 25	10		10		71	10					
Sweepers	1	5	1 00	10										
Shipping clerks	1		1 75	10		1		2 31	10		1		1 17	10
Superintendents	6		3 34	10		8		4 00	10		2		3 25	10
Superintendents	1		3 00	10		1		3 50	10		1		2 50	10
Superintendents	2		6 00	10			3	2 00	10			5	1 50	10
Saw filers	4		1 50	10										
Saw makers	2		2 50	10		18		4 00	10		9		1 75	10
Storekeepers	1		1 35	10		1		2 37	10		1		1 30	10
Stitchers		10	84	10		33		1 50	10			22	90	10
Butchers	4	47	1 25	10		1	3	1 00	10					
Silver platers	2		3 00	10										
Stone cutters	10		3 25	10										
Stranders	2		1 50	10										
Stogie makers†		2	1 60	10		1	1	1 20	10			11	1 44	10
Stogie makers		40	98	10		1	50	88	10		1	60	92	10
Stogie makers		28	1 11	10			37	1 12	10			25	1 00	10
Stogie makers	8	10	88	10		16	5	82	10		2	68	75	10
Stogie makers	10	77	68	10		9	45	48	10		10	100	50	10
Stogie makers	6	65	30	10		7	105	25	10					
Stenographers	25	2	1 75	10			18	1 00	10		1		2 50	10
Trimmers	21		2 00	10		68		2 15	10		18		1 75	10
Trimmers	1		1 70	10		4		2 12	10		5		2 25	10
Trimmers	3		1 50	10		5		3 00	10			18	1 00	10
Tinners	11		2 25	10		25		2 00	10		10		1 75	10
Tent makers		1	1 00	10			6	84	10					
Tile makers	6		1 50	10										
Teasers	1		4 25	10		4		1 85	10					
Turn men	9		1 35	10										
Tanners	9		1 50	10		18		2 00	10					
Table hands		5	32½	10										

† Per dozen.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Columbus—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Trunk makers	13		\$1 56	10	1		\$2 50	10	1		\$2 00	10
Trunk makers	2		1 25	10	1		1 00	10	1		65	10
Tailors	162		2 00	10	58		1 50	10	200		1 00	10
Tailors	94		1 75	10	43		1 25	10				
Temperers	1		1 25	10	1		2 00	10				
Tool makers	1		1 75	10								
Upholsterers	15	2	2 25	10		3	88	10	1		1 70	10
Upholsterers	1		1 20	10	4		1 75	10				
Utility men	1		50	10	14		1 10	10				
Vise hands	4		1 35	10								
Winders	2	1	*	10								
Watch makers	137		2 10	10		58	85	10				
Wrappers		14	75	10	6	6	1 00	10				
Wool pullers	4		1 25	10								
Watchmen	10		1 10	10	11		1 50	10	12		1 25	10
Watchmen	13		1 40	10	11		1 00	10	11		1 80	12
Woodworkers	140		1 75	10	150		2 50	10	130		1 65	10
Woodworkers	148		1 50	10	125		2 00	10	130		2 25	10
Wool turner	1		1 25	10								
Yard men	4		1 25	10	1		2 69	10	8		1 60	10

Total number of men employed, 10,761. Total number of women employed, 2,680.

* 40 cents per pound.

Wauseon, Fulton County.

Apprentices	1		75	10	1		50	10				
Blacksmiths	6		2 00	10								
Bricklayers	3		3 50	10								
Book-keepers	1		2 00	10								
Clerks in stores	40		90	10		4	60	10				
Carpenters	10		2 25	10								
Cutters	2		2 00	10								
Dressmakers		7	75	10								
Editors	1		2 50	10	1		3 00	10				
Engineer	1		1 75	10								
Foreman	1		2 50	10								
Hod carriers	5		1 25	10								
Laborers	5		1 25	10								
Millers	8		2 25	12								
Painters	4		2 00	10								
Printers	4		1 75	10	1		3 00	10				
Plasterers	5		2 50	10								
Stone masons	3		3 00	10								
Tailors	5		2 50	10								
Teamsters	2		1 35	12								

Total number of men employed, 110. Total number of women employed, 11.

Gallipolis, Gallia County.

Apprentices	2		50	8	1		25	8	1		84	10
Apprentices	6		1 00	10								
Brewer	1		2 50	10								
Blacksmiths	2		1 50	10	2		1 62	10	14		2 00	10
Broom makers	12		1 75	9	5		1 50	10				
Boiler makers	4		2 00	10								
Bricklayers	3		3 00	10	12		2 00	10				
Book-keeper	1		1 25	10								
Brick makers	5		2 00	10								
Brick pressers	6		2 00	10								
Clerks	1		84	10	2		3 00	10				
Carpenters	10		2 00	10	20		1 75	10				
Compositors	1		1 75	8	1		1 00	8				
Cigarmakers	7		1 50	10	4		1 75	10	4		1 35	10
Cupola tenders	1		1 25	10								
Casting cleaner	1		50	10								

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Gallipolis—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Cabinet makers.....	18	....	\$1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Carvers	5	....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Clerks in stores.....	75	....	1 20	10	.....	20	\$ 75	10	.....	.....	.....	.....
Dre-smakers.....	.....	15	75	10	.....	.....	.....	.....	.....	.....	.....	.....
Drivers	5	....	1 50	10	1	....	1 60	12	.....	.....	.....	.....
Engineers	1	....	1 25	10	3	....	1 10	10	1	....	\$1 75	12
Enginee s	1	....	1 00	12	1	....	1 25	12	.....	.....	.....	.....
Editor	1	....	2 00	8	.....	.....	.....	.....	.....	.....	.....	.....
For-man.....	1	....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Finishers	44	....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Grinder	1	....	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Helpers.....	1	....	75	10	16	....	60	10	.....	.....	.....	.....
Hod carriers.....	12	....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Laborers.....	3	....	80	10	2	....	25	10	14	....	1 25	10
Laborers.....	8	....	1 00	12	20	....	1 25	12	20	....	1 15	10
Laborers.....	60	....	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Machine hands.....	27	....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Mounters	3	....	2 00	10	1	....	1 50	10	.....	.....	.....	.....
M oulders	11	....	2 00	10	7	....	2 10	10	.....	.....	.....	.....
Machinists.....	9	....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Managers	2	....	2 50	10	1	....	3 00	12	.....	.....	.....	.....
Millers.....	1	....	3 34	12	4	....	2 00	12	2	....	2 15	12
Millers.....	1	....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Packers	5	....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Plasterers.....	12	....	2 25	10	2	....	2 50	10	.....	.....	.....	.....
Painters	15	....	1 75	10	2	....	2 50	10	.....	.....	.....	.....
Plumbers	4	....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Strippers.....	3	....	50	10	1	....	40	10	.....	.....	.....	.....
Superintendents	1	....	3 00	10	5	....	4 00	10	.....	.....	.....	.....
Stone mas ns	2	....	2 50	10	9	....	2 50	12	.....	.....	.....	.....
Sal smen	1	....	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Type setters .....	.....	2	84	10	.....	.....	.....	.....	.....	.....	.....	.....
Tailors	13	....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Up fitters	4	....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Woodworkers	1	....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Watchmen.....	2	....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 594. Total number of women employed, 37.

Xenia, Greene County.

Bricklayers	15	....	3 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Book-keepers.....	2	....	2 00	10	1	....	1 50	10	1	....	3 33	9½
Brewer	1	....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Boiler maker	1	....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Blacksmiths	10	....	1 75	10	1	....	2 25	10	.....	.....	.....	.....
Ballers.....	.....	35	1 00	9½	.....	.....	.....	.....	.....	.....	.....	.....
Brakemen	3	....	2 50	10	15	....	1 80	10	.....	.....	.....	.....
Cal shov-ers	8	....	1 15	10	.....	.....	.....	.....	.....	.....	.....	.....
Coach cleaners	4	....	1 40	10	.....	.....	.....	.....	.....	.....	.....	.....
Car inspectors	9	....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Carpenters.....	3	....	1 50	10	31	....	1 75	10	8	....	2 00	10
Cigar-makers	7	....	1 60	10	8	....	1 50	10	2	....	1 87	10
Compositors	8	....	1 34	10	.....	6	84	10	8	....	1 75	10
Compositors .....	.....	1	1 00	10	3	....	1 50	10	.....	.....	.....	.....
Clerks	1	....	1 50	10	.....	2	1 00	10	.....	.....	.....	.....
Clerks in stores.....	75	....	1 25	10	.....	14	75	10	.....	.....	.....	.....
Dre-smakers .....	.....	14	60	10	.....	.....	.....	.....	.....	.....	.....	.....
Engineers.....	1	....	1 75	10	2	....	1 50	10	1	....	2 50	10
Engineers.....	8	....	2 00	10	1	....	2 50	9½	.....	.....	.....	.....
Editors.....	1	....	1 50	10	6	....	2 50	10	.....	.....	.....	.....
Foremen.....	1	....	5 00	10	1	....	3 00	10	11	....	2 25	9½
Finisher	1	....	1 66⅔	10	.....	.....	.....	.....	.....	.....	.....	.....
Girls .....	.....	27	67	10	.....	.....	.....	.....	.....	.....	.....	.....
Hod carriers	44	....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Helpers	1	....	1 50	10	1	....	1 00	10	.....	.....	.....	.....
Laborers.....	16	....	1 50	10	27	....	1 35	10	.....	23	70	10

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Xenia—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Laborers.....	45		\$1 30	9½	116		\$1 00	10	30		\$1 15	10
Laborer.....	129		1 25	10								
Machinists.....	4		2 25	10	6		2 10	9½				
Machine hands.....	1		2 00	10	2		1 80	10	35		1 50	9½
Miller.....	1		1 50	10								
Plumbers.....	3		2 50	10								
Painters.....	16		1 75	10								
Plasterers.....	14		2 00	10								
Preparers.....		20	84	9½								
President.....	1		18 00	10								
Roundhousemen.....	7		1 33	10								
Stenographer.....	1		3 33	9½								
Stonemasons.....	12		2 25	10								
Sawyers.....	1		1 50	10	1		1 75	10	1		2 00	9½
Sawyers.....	1		2 50	9½								
Spinners.....		20	1 09	9½								
Stippers.....	1		66	10	2	1	35	10	2	3	30	10
Secretary.....	1		5 00	10								
Treasurer.....	1		3 33	10								
Tailors.....	13		2 25	10								
Vice-President.....	1		5 00	10								
Wiper.....	1		1 15	10								
Watchmen.....	2		1 15	10								
Wood cutters.....	3		1 15	10								

Total number of men employed, 802. Total number of women employed, 166.

Cambridge, Guernsey County.

Apprentices.....	1		60	10								
Bricklayers.....	3		3 00	10	6		2 50	10				
Backs with.....	11		2 00	10	6		2 25	9½	4		1 75	10
Boiler makers.....	4		2 25	9½								
Carpenters.....	18		2 00	10	4		2 00	9½				
Core maker.....	1		1 50	9								
Cupola tender.....	1		1 50	9								
Comp stools.....	5		1 50	10		1	1 50	9				
Clerks.....	2		2 20	9½								
Clerks in stores.....	22		1 50	10		10	60	10				
Carvers.....	22	35	55	10								
Cigar makers.....	5		1 25	10		1	75	10	3		1 50	10
Coach cleaners.....	2		1 50	9½								
Call-r.....	1		1 10	9½								
Car inspectors.....	10		1 70	9½								
Dress-makers.....		12	75	10								
Engineer.....	1		1 50	9	2		1 80	9½	1		1 65	10
Editors.....	1		1 50	10	2		2 00	10	2		2 50	10
Foremen.....	1		3 34	10								
Firemen.....	1		1 50	10								
Helpers.....	3		1 00	10	22		75	10				
Hod carriers.....	8		1 40	10								
Hostlers.....	5		1 75	9½								
Laborers.....	1		1 00	9	13		1 25	10				
Mill-r.....	1		2 00	10								
Managers.....	2		2 50	10								
Machine-men.....	2		2 60	10	6		1 65	10	10		1 25	10
Machine men.....	4		1 00	10								
Machinists.....	13		2 25	10								
Moulders.....	4		1 75	9	1		1 70	9½				
Painters.....	7		2 00	10	5		1 75	10	3		1 85	9½
Plasterers.....	8		2 25	10								
Plumbers.....	2		2 25	10								
Pattern maker.....	1		2 50	9½								
Pumper.....	1		1 25	9½								
Stone masons.....	4		2 75	10	5		2 50	10				
Sectionmen.....	20		1 15	10								
Sand-houseman.....	1		1 10	9½								

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Cambridge—Concluded.

Occupation.	No. em- ployed		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Superintendent	1	...	\$3 34	10	.....	.....	.....	.....	.....	.....	.....	.....
Secretary	1	.....	3 34	10	.....	.....	.....	.....	.....	.....	.....	.....
Strippers .....	.....	1	50	10	.....	1	\$ 40	10	.....	.....	.....	.....
Tailors	7	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Trimmers	2	.....	2 00	10	1	.....	2 25	10	.....	.....	.....	.....
Tinners	2	.....	2 00	9½	.....	.....	.....	.....	.....	.....	.....	.....
Wipers	9	.....	1 25	9½	.....	.....	.....	.....	.....	.....	.....	.....
Woodworkers	4	.....	1 75	10	2	.....	2 00	10	.....	.....	.....	.....

Total number of men employed, 323. Total number of women employed, 61. .

Quaker City.

Bunchers	5	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Box maker	1	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Blacksmith	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Cutters	4	.....	5 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Carpenters	6	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Clerks	2	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Cigar makers	4	.....	2 00	10	2	.....	1 15	10	.....	.....	.....	.....
Engineer	1	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Flatteners	3	.....	6 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Foreman	1	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Glass blowers	10	.....	7 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Gatherers	10	.....	4 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Laborers	20	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Pot maker	1	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Packer	1	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Strippers .....	.....	3	25	10	.....	.....	.....	.....	.....	.....	.....	.....
Snappers	8	.....	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Teasers	1	.....	5 00	10	5	.....	1 50	10	.....	.....	.....	.....

Total number of men employed, 86. Total number of women employed, 3.

Cincinnati, Hamilton County.

Adjusters	3	.....	2 75	10	2	.....	2 25	10	.....	.....	.....	.....
Apprentices	22	.....	66	10	26	.....	60	10	68	.....	1 60	10
Apprentices	20	.....	83	10	20	.....	50	10	14	.....	87	10
Apprentices	94	.....	75	10	32	.....	95	10	28	.....	1 25	10
Apprentices	20	.....	70	10	20	.....	67	10	13	.....	1 12	10
Apprentices	13	.....	92	10	13	.....	45	10	12	.....	1 10	10
Artists	16	.....	9 00	10	18	.....	3 33	10	30	.....	5 50	10
Artists	13	.....	5 83	10	.....	.....	.....	.....	.....	.....	.....	.....
Assemblers	3	.....	2 50	10	4	.....	2 00	10	.....	.....	.....	.....
Assorters .....	.....	29	50	10	10	.....	1 50	10	8	.....	33	9
Assorters	40	.....	40	9	39	.....	50	9	72	.....	75	9
Assorters	8	.....	1 70	9	.....	.....	.....	.....	.....	.....	.....	.....
Awning hangers	3	.....	1 50	10	4	.....	2 00	10	.....	.....	.....	.....
Axle makers	30	.....	1 60	10	20	.....	1 50	10	.....	.....	.....	.....
Bakers*	158	.....	1 75	.....	54	.....	2 00	.....	.....	58	75	.....
Bakers	47	.....	1 66	.....	44	.....	1 60	.....	51	.....	1 25	.....
Bakers	42	.....	1 35	.....	42	48	1 00	.....	45	.....	1 50	.....
Bakers	47	.....	1 85	.....	43	.....	1 83	.....	48	.....	2 50	.....
Bakers	55	.....	2 05	.....	.....	.....	.....	.....	.....	.....	.....	.....
Blacksmiths	129	.....	1 50	10	19	.....	2 66	10	20	.....	1 85	10
Blacksmiths	19	.....	1 66	10	27	.....	2 50	9	27	.....	2 75	10
Blacksmiths	20	.....	2 83	10	45	.....	1 60	10	32	.....	1 75	9
Blacksmiths	37	.....	2 85	10	64	.....	2 25	10	32	.....	1 85	10
Blacksmiths	20	.....	2 40	10	57	.....	2 00	10	32	.....	1 75	10
Blacksmiths	64	.....	3 00	10	19	.....	2 38	9	43	.....	2 00	9
Blacksmiths	142	.....	1 25	10	482	.....	2 50	10	.....	.....	.....	.....

* Work 12 and 13 hours daily.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Cincinnati—Continued.

Occupation.	No. employed.		Wages per day.	Hours of labor daily.	No. employed.		Wages per day.	Hours of labor daily.	No. employed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Blockers	4	.....	2 00	10	.....	.....	2 00	10	7	.....	1 00	10
Burnishers.....	1	.....	2 33	10	12	.....	2 00	10	.....	.....	.....	.....
Burnishers.....	.....	25	83	10	2	.....	2 50	10	.....	.....	.....	.....
Box makers	23	75	1 75	10	4	.....	2 23	10	12	.....	1 40	10
Box makers .....	.....	12	65	10	28	30	75	10	.....	18	1 66	10
Box makers .....	.....	13	1 50	10	.....	30	1 82	10	.....	6	2 10	10
Bronzers.....	6	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Bench hands.....	18	.....	2 25	10	81	.....	75	10	95	.....	1 00	10
Bench hands.....	43	.....	2 16	10	9	.....	2 75	10	30	.....	1 50	10
Bench hands.....	8	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Bung makers.....	27	.....	1 60	10	14	.....	1 40	10	.....	.....	.....	.....
Brick makers	50	.....	2 00	10	28	.....	1 25	10	30	.....	1 40	10
Brick makers	46	.....	1 50	10	43	.....	1 75	10	.....	.....	.....	.....
Belt makers	14	.....	2 00	10	16	.....	2 50	10	.....	.....	.....	.....
Book-keepers.....	9	.....	4 00	8	13	.....	1 67	10	8	.....	3 50	8
Book-keepers.....	9	.....	4 12	10	7	.....	3 66	10	17	.....	2 00	9
Book-keepers.....	13	.....	5 00	9	10	.....	3 33	10	11	.....	1 50	10
Book-keepers.....	16	.....	1 50	8	9	.....	4 81	9	7	.....	2 30	10
Book-keepers.....	8	.....	1 00	10	14	.....	3 00	9	8	.....	1 25	10
Book-keepers.....	89	1	3 50	10	9	.....	5 00	10	9	.....	8 50	10
Book-keepers.....	7	.....	1 37	10	11	.....	2 00	8	24	.....	1 33	10
Book-keepers.....	9	.....	3 62	8½	8	.....	1 04	10	19	.....	1 00	9
Book-keepers.....	18	.....	3 00	8	7	.....	1 83	10	7	.....	2 83	10
Book-keepers.....	27	.....	2 50	10	10	.....	4 16	10	7	.....	4 50	10
Book-keepers.....	8	.....	6 00	9	9	.....	2 50	10½	11	.....	2 75	9
Book-keepers.....	10	.....	2 25	10	7	.....	1 00	5	.....	2	1 75	10
Book-keepers.....	.....	2	2 50	9	.....	1	2 50	7	.....	1	60	9
Book-keepers.....	.....	2	3 00	10	.....	1	3 33	10	9	.....	2 50	12
Book-keepers.....	10	.....	4 25	8	10	.....	4 80	9	22	.....	4 00	10
Book-keepers.....	8	.....	2 20	9	7	.....	4 62	8	28	.....	4 00	9
Book-keepers.....	8	.....	4 25	10	8	.....	6 00	10	12	.....	3 50	9
Book-keepers.....	17	.....	7 00	9	4	.....	3 40	10	4	.....	2 50	8
Book-keepers.....	24	.....	3 00	10	8	.....	1 70	10	14	.....	2 00	10
Book-keepers.....	10	.....	1 66	9	4	.....	3 75	10	12	.....	1 75	9
Book-keepers.....	24	.....	5 00	10	14	.....	2 75	10	11	.....	2 65	10
Book-keepers.....	13	.....	1 75	10	14	.....	2 12	10	14	.....	3 33	10
Book-keepers.....	11	.....	5 50	9½	7	.....	2 50	9½	12	.....	3 25	10
Book-keepers.....	7	.....	2 25	9	.....	9	1 00	10	.....	.....	.....	.....
Brewers	75	.....	3 00	10	10	.....	1 30	10	34	.....	2 30	10
Brewers	15	.....	2 00	10	123	.....	2 50	10	18	.....	1 75	10
Brewers	180	.....	2 15	10	18	.....	1 73	10	126	.....	2 10	10
Brewers.....	35	.....	2 25	10	53	.....	2 95	10	200	.....	2 12	10
Body makers	12	.....	2 57	10	64	.....	2 50	10	92	.....	2 00	10
Body makers.....	48	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Brush makers.....	14	.....	1 50	10	.....	15	50	10	25	5	1 00	10
Brush makers.....	15	10	75	10	.....	.....	.....	.....	.....	.....	.....	.....
Binders.....	13	.....	3 00	10	10	25	1 00	10	22	.....	1 50	10
Binders .....	.....	185	66¾	10	17	.....	1 66	10	.....	83	75	10
Binders	44	.....	2 50	10	.....	16	85	10	8	.....	2 00	10
Binders .....	.....	17	50	10	26	.....	1 60	10	.....	45	86	10
Binders.....	8	.....	2 25	10	13	.....	2 60	10	.....	.....	.....	.....
Beaters	11	.....	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Broom makers.....	36	.....	1 75	10	9	.....	2 00	10	9	.....	1 50	10
Broom makers.....	6	.....	1 25	10	.....	10	1 00	10	.....	.....	.....	.....
Button hole makers.....	20	.....	1 66	9	20	.....	1 20	10	82	.....	2 50	10
Button hole makers.....	60	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Bottle washers.....	.....	30	75	10	13	.....	1 85	10	14	.....	1 10	10
Bottle washers.....	11	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Bottlers	12	.....	1 66	10	18	.....	1 50	10	18	.....	50	10
Bottlers.....	7	.....	2 00	10	5	24	75	10	.....	.....	.....	.....
Boiler makers.....	19	.....	2 30	10	41	.....	2 75	10	4	.....	3 00	10
Boiler makers.....	24	.....	2 25	10	80	.....	2 50	10	.....	.....	.....	.....
Butchers.....	100	.....	1 00	10	160	.....	2 50	10	144	.....	1 85	10
Buffers.....	8	.....	2 00	10	2	.....	1 75	10	.....	.....	.....	.....
Black burners.....	4	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Beackers.....	11	.....	2 00	10	10	1	1 12	9	.....	.....	.....	.....
Box nailers	12	.....	1 25	10	15	.....	1 40	10	25	.....	1 50	10
Box nailers	19	.....	1 66	10	.....	.....	.....	.....	.....	.....	.....	.....

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Cincinnati—Continued.

Occupation.	No. employed.		Wages per day.	Hours of labor daily.		No. employed.		Wages per day.	Hours of labor daily.		No. employed.		Wages per day.	Hours of labor daily.
	Men.	Women.				Men.	Women.				Men.	Women.		
Bag makers.....	.....	4	66 ² / ₃	10		1	.....	\$1 50	10		9	2	\$1 00	10
Bench breakers.....	40	40	1 12	8		28	30	1 33	10		.....	.....	.....	.....
Bottomers.....	150	.....	2 00	10		153	.....	3 00	10		25	.....	2 50	10
Bricklayers.....	325	.....	4 50	9		.....	.....	.....	.....		.....	.....	.....	.....
Confectioners.....	30	.....	3 00	10		138	.....	2 00	10		115	.....	1 75	10
Confectioners.....	.....	38	75	10		.....	140	60	10		.....	.....	.....	.....
Candle makers.....	22	.....	1 82	10		11	4	1 50	10		1	.....	1 27	10
Candle makers.....	2	.....	2 08	10 ¹ / ₂		.....	.....	.....	.....		.....	.....	.....	.....
Canners.....	40	16	75	10		100	10	1 00	10		100	25	50	10
Cabinet makers.....	87	.....	2 25	10		46	.....	1 90	10		89	.....	1 75	10
Cabinet makers.....	318	.....	2 00	10		41	.....	1 66	9		36	.....	1 50	10
Cabinet makers.....	26	.....	1 80	10		28	.....	1 30	9		40	.....	2 75	9
Cabinet makers.....	160	.....	2 05	9		35	.....	1 83	9		48	.....	2 15	10
Cabinet makers.....	41	.....	1 82	10		.....	.....	.....	.....		.....	.....	.....	.....
Car cleaners.....	25	.....	1 25	10		.....	.....	.....	.....		.....	.....	.....	.....
Car loaders.....	4	.....	1 75	10		.....	.....	.....	.....		.....	.....	.....	.....
Carders.....	4	.....	2 00	10		4	.....	1 25	0		8	.....	80	10
Carders.....	88	.....	1 33	10		13	.....	50	10		.....	.....	.....	.....
Carpet weavers.....	8	9	1 00	10		12	.....	1 15	10		.....	7	75	10
Carpenters.....	210	.....	2 50	9		202	.....	2 75	10		110	.....	1 33	9
Carpenters.....	290	.....	1 80	9		209	.....	2 00	9		210	.....	2 00	9 ¹ / ₂
Carpenters.....	212	.....	2 00	9		50	.....	1 83	10		44	.....	3 00	10
Carpenters.....	207	.....	2 15	9		230	.....	2 20	10		201	.....	2 16	10
Carpenters.....	40	.....	1 00	9		70	.....	2 66	10		30	.....	2 70	10
Carpenters.....	414	.....	2 75	10		21	.....	1 50	10		31	.....	2 35	10
Carpenters.....	20	.....	2 65	10		144	.....	2 25	9		50	.....	2 60	10
Cap makers.....	.....	20	1 00	10		.....	16	75	10		.....	.....	.....	.....
Catchers.....	70	.....	2 00	10		.....	.....	.....	.....		.....	.....	.....	.....
Casters.....	9	.....	1 33	10		.....	.....	.....	.....		.....	.....	.....	.....
Carvers.....	129	.....	2 50	10		9	.....	3 00	10		14	.....	1 83	10
Carvers.....	13	.....	1 45	10		127	.....	2 00	10		4	.....	2 25	10
Carvers.....	4	.....	1 60	10		4	.....	2 03	10		.....	.....	.....	.....
Chain makers.....	42	.....	2 00	10		.....	.....	.....	.....		.....	.....	.....	.....
Chair makers.....	19	.....	2 00	10		88	.....	2 25	10		.....	32	50	10
Chair makers.....	.....	20	75	10		18	.....	1 75	10		.....	.....	.....	.....
Chemists.....	3	.....	2 00	10		4	.....	4 00	10		1	.....	3 00	10
Chippers.....	5	.....	1 50	10		4	.....	2 00	10		.....	.....	.....	.....
Clerks.....	2	.....	2 75	10		3	.....	3 25	9 ¹ / ₂		8	.....	2 40	9 ¹ / ₂
Clerks.....	11	.....	2 50	9 ¹ / ₂		5	.....	1 66	9 ¹ / ₂		2	.....	85	9
Clerks.....	11	.....	1 90	8 ¹ / ₂		7,537	.....	2 00	10		120	.....	2 50	10
Clerks.....	10	.....	2 00	8		4	.....	1 58	10		6	.....	1 80	10
Clerks.....	42	2	3 80	10		65	19	1 75	10		12	.....	3 86	8
Clerks.....	21	.....	2 50	8		31	2	1 50	9		5	.....	1 25	10
Clerks.....	.....	11	1 50	8 ¹ / ₂		.....	2	75	10		31	2214	1 00	10
Clerks.....	.....	1	1 66	11		.....	3	1 12	9		.....	5	1 70	9
Clerks.....	7	224	1 25	9		.....	1	2 25	8		.....	3	1 50	8
Clerks.....	15	.....	1 02	10		4	.....	2 75	9		587	.....	2 00	9
Clerks.....	7	.....	4 10	9		13	.....	4 00	10		8	.....	1 00	9
Clerks.....	4	.....	2 75	10		5	.....	1 75	9		13	.....	1 35	9
Clerks.....	1	.....	2 66	10		11	.....	1 70	10		8	.....	1 16	10
Clerks.....	5	.....	4 50	10		1	.....	2 69	10		4	.....	2 00	10
Clerks.....	7	.....	1 70	10		7	.....	1 50	10		120	.....	2 50	0
Clerks.....	6	.....	75	10		10	.....	2 00	8		3	.....	2 60	10
Clerks.....	15	.....	2 25	10		5	.....	1 10	9		.....	2	1 08	0
Clerks.....	3	1	50	10		2	1	83	10		.....	1	1 75	10
Clerks.....	.....	1	1 06	9		.....	5	1 88	10		1	.....	4 16	0
Clerks.....	1	.....	8 00	10		2	.....	2 05	10		1	.....	2 62	0
Clerks.....	9	.....	2 11	9		4	.....	1 51	9		1	.....	1 10	10
Clerks.....	1	.....	4 25	10		7	.....	2 85	8		3	.....	3 33	10
Clerks.....	1	.....	6 00	10		4	.....	1 58	9		1	.....	3 84	10
Clerks.....	2	.....	1 54	10		2	.....	1 67	10		30	.....	4 00	8
Clerks.....	53	.....	3 00	9		15	.....	1 98	10		2	.....	2 56	0
Clerks.....	5	.....	6 50	10		51	.....	1 50	10		12	.....	3 50	10
Clerks.....	12	.....	1 47	10		1	.....	40	10		.....	.....	.....	.....
Collar makers.....	45	.....	1 75	8		33	.....	2 00	8		45	4	1 50	9
Compilers.....	3	.....	3 00	10		.....	.....	.....	.....		.....	.....	.....	.....
Coke handlers.....	6	.....	1 50	12		5	.....	2 00	12		.....	.....	.....	.....

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Cincinnati—Continued.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.		No. em- ployed.		Wages per day.	Hours of labor daily.		No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.				Men.	Women.				Men.	Women.		
Combers	25		\$1 66	10										
Collectors	4		2 50	10		13		\$2 00	8		4		1 66	9
Collectors	4		2 00	9		3		5 00	8		1		5 00	9
Collectors	3		4 00	10		4		3 00	10		6		5 00	10
Collectors	8	5	1 66	10		4	7	1 71	10		8		4 10	10
Coopers	49		1 50	9		74		1 40	9		144		2 00	8
Coopers	100		2 00	10		85		2 25	10		72		1 75	10
Coopers	44		2 00	9		54		1 70	10		49		1 50	9
Coopers	48		1 82	10		41		2 50	10		45		2 45	10
Coopers	42		2 85	10		100		2 25	8		50		1 75	9
Coppersmiths	41		2 50	10		21		2 00	10		40		2 00	8
Core makers	18		2 00	10		3		2 25	10		8		1 50	10
Core makers	25		2 10	10		8		1 00	10					
Cornice makers	13		2 40	10		46		2 25	10		15		2 08	10
Cupola tenders	4		2 42	10		10		2 50	10					
Curriers	220		1 80	10		90		2 00	10					
Curtain makers		3	1 06	10			5	1 00	10			7	75	10
Compositors *2	106		2 50	10		30		3 75	8		29		2 25	10
Compositors	50		3 50	9		17		1 00	10		20		1 00	9
Compositors	100	4	6 66	10		119	6	4 62	10		45		3 00	8
Compositors	33	1	2 46	8		14	18	75	8		15	4	95	10
Compositors	40		2 20	8		30		2 75	8		34		2 00	8
Compositors	13		3 00	9 1/4		40		1 75	8		21		1 70	10
Compositors	42		1 66	10		132		2 00	10		33		1 50	10
Compositors	14		1 92	10		47		2 95	10		28		2 60	10
Compositors	11		2 75	10			25	50	10			23	66	10
Compositors		16	33	10			21	35	10			7	40	10
Cigarmakers	304	85	1 50	10		66	30	1 60	10		140	6	2 00	10
Cigarmakers	8		2 25	8		40		1 75	8		4		1 80	8
Cigarmakers	150	142	1 90	8		40	7	1 66	8		60	30	1 33	10
Cigarmakers	328	91	1 00	10		6		1 25	10		232	26	1 05	10
Cigarmakers	10		2 15	8		8		1 65	8		54		1 45	9
Cigarmakers	6	3	1 12	8		124		1 17	8					
Cutters (slate)	6		3 00	9		10		3 50	10		2		2 50	10
Cutters (marble)	20		2 50	16		2		1 50	9		16		3 00	10
Cutters (shoe)	18		4 50	9 1/2		28		2 50	10		20		1 80	10
Cutters (shoe)	20		1 66	9 1/2		18		3 50	10		142		3 00	9 1/2
Cutters (shoe)	6		1 05	10		44	5	1 50	10		2	5	1 16	9
Cutters (shoe)	6		4 25	10		8		2 00	9		18		3 29	10
Cutters (stencil)	4		1 50	10		3		2 50	10					
Cutters (stock)	3		3 00	9		5		2 50	10					
Cutters (paper)	2		1 50	10		3	1	1 25	10		2	3	1 00	10
Cutters (tile)	18		2 00	10										
Cutters (stone)	28		3 05	10		16		3 20	9		295		4 05	9
Cutters (stone)	2		2 25	10		16		4 69	9					
Cutters (cloak)	8		2 50	10		6	2	1 22	10		16		2 00	10
Cutters (tailors)	20		4 00	10		98		3 00	10		16		5 00	9
Cutters (tailors)	40		2 25	10		18		2 00	10					
Cutters (leather)	4		3 00	10		9		3 33	10					
Cutters (hat)	2		1 50	9										
Cutters (tobacco)	4		1 66	9										
Cutters (glass)	5		2 50	10										
Cutters (screw)	10		1 25	10										
Decorators	13		2 30	10				1 00	10		42		2 25	10
Decorators	5		2 80	10		2	8	2 25	9			10	75	10
Designers	4		4 50	10		11		3 00	10		8		2 50	10
Dippers	4		1 66	10		8		1 33	10					
Die sinkers	4		3 00	10		3		2 50	10		5		2 00	10
Dressers	8		1 85	10		8		3 00	8		2		2 00	8
Dressers	6		1 75	10		4		2 25	10					
Draughtsmen	4		2 50	10		4		3 00	10		1		4 00	10
Draughtsmen	2		3 33	10		4		3 25	10		2		5 00	10
Dyers	8		1 75	10		4		2 00	10		16		1 35	10
Dyers	2		3 00	10										

*2 The I. T. U. has a membership of 600. Its scale is—day work, 39 1/2 cents per thousand night work, 42 cents; book work, 45 cents; week hands, \$18.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.
Cincinnati—Continued.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Dressmakers!		2000	*3	10								
Edgers.	4		\$3 00	10	2		\$ 83	10				
Electrotypers.	4		5 00	10								
Elevator men.	8		1 50	10								
Engine cleaners	16		1 20	10								
Engineers.	10		3 60	10	14		3 50	10	8		\$2 50	10
Engineers.	11		1 54	10	11		2 15	10	6		2 10	12
Engineers.	71		2 50	10	7		1 83	10	8		2 75	10
Engineers.	26		1 67	10	112		3 00	10	26		2 25	10
Engineers.	7		2 63	10	14		1 75	10	4		2 33	10
Engineers	12		2 10	10	11		2 41	10	12		4 00	10
Engineers	11		2 67	10	94		2 00	10	12		2 37	10
Engineers.	7		1 25	10	7		3 60	10	4		1 50	10
Engineers.	3		3 33	9	4		2 80	12				
Engravers.	42		3 00	10	4		2 00	10	7		4 00	9
Engravers.	6		3 25	10	14		5 00	10	16		2 39	10
Engravers.	2		5 83	10	6		12 80	10	1		1 00	10
Editors.	6		6 00	10	12		4 00	10	1		5 00	10
Editors	2		2 50	10	2		4 50	10	18		3 50	10
Editors.	6		3 00	10	33		4 31	8	8		7 00	10
Foremen.	8		1 87	10	3		3 84	10	3		4 17	10
Foremen.	4		6 00	9	3		7 00	9	9		4 35	9
Foremen.	3		3 35	9	3		3 50	9	3		6 00	8
Foremen.	3		5 21	10	7		2 87	10		8	1 00	9
Foremen.	9		4 50	10	8		3 33	10	3		9 00	10
Foremen.	3		8 00	10	10		5 50	10		3	1 50	10
Foremen.	4	4	1 25	10	5		3 67	10	3		6 67	10
Foremen.	5		2 66	10	4		3 85	10	4		3 00	8
Foremen.	4		1 66	10	5	3	1 00	10	14		1 75	10
Foremen.	45		4 00	10	53		3 00	10	1		20 00	10
Foremen	4		2 50	10	4		2 30	10	2		4 80	10
Foremen.	3		4 16	9	3		2 83	10	3		2 50	9
Foremen.	3		8 00	9		8	75	10	3		4 65	9
Foremen.	3		5 20	10	45		2 50	10	3		6 66	10
Foremen.	25		2 00	10	4		2 35	10	10		2 66	10
Foremen.	3		4 15	10	15		5 00	10	3		2 20	10
Foremen.	6		4 10	10	5		10 00	10	15		2 75	10
Foremen.	7		6 00	10	6		2 16	10	11		4 25	10
Foremen	11		2 25	10	10		2 12	10	5		2 00	9 ¹ / ₂
Foremen	10		3 25	10	26		3 50	10	3		3 00	9
Foremen.	7		5 00	9	3		2 50	12	4		3 60	8
Firemen	8		1 50	10	5		2 10	10	10		1 66	10
Firemen	8		1 75	10	5		1 60	10	63		1 65	10
Firemen	4		1 25	10	5		1 85	10	56		2 00	10
Firemen	4		3 00	10	5		2 25	10	5		1 67	10
Fireman	18		1 82	10	5		2 33	10	4		1 58	10
Firemen	4		1 00	10	6		1 50	10	4		2 50	10
Firemen	6		1 85	9	6		2 00	9	9		2 25	12
Firemen.	6		1 93	10	6		1 66	10				
Furnace tenders.	14		2 00	10	25		1 75	10				
Flag makers	4		1 50	10		12	85	10				
Fitters (shoe)	16		1 80	10	20	75	75	10		300	50	10
Fitters (shoe)		32	1 50	10	252		1 04	10		570	100	10
Fitters (shoe)		436	1 25	10								
Fitters (stock)	30		2 50	10	18		2 00	10	52		2 55	10
Fitters (pipe)	16		2 50	10	10		2 25	10				
Fitters (brass)	4		2 17	10								
Finishers	20	110	2 00	10	44		2 50	10				
Finishers	34	110	2 00	9								
Forgers	6		1 66	10								
Foot press operators.	3	4	1 00	10	3	5	75	10				
Fertilizers	3		1 87	10								
Flangers	4		2 75	10								
Filers	4		1 58	10	7		1 95	10		35	78	10
Filers	22		1 42	10	12		2 50	10	20		200	10
Forwarders	2		1 00	10								

*3 Average about 75 cents per day.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Cincinnati—Continued.

Occupation.	No. employed.		Wages per day.	Hours of labor daily.	No. employed.		Wages per week.	Hours of labor daily.	No. employed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Folders	16	10	\$.66	10	13	12	\$1 00	10	22	3	\$.83	10
Folders	8	15	.75	10	10	12	.75	9	27	14	.90	10
Folders	12	50	.50	10	25	75	.25	9	.....	.....	.....	.....
Frame makers	8	.....	1 66	10	7	.....	2 50	10	20	.....	2 00	10
Grainers	50	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Gear makers	8	.....	2 25	10	12	.....	2 50	10	14	.....	1 85	10
Greasers	12	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Gazers	4	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Greasers	4	.....	1 50	10	2	.....	1 00	10	.....	.....	.....	.....
Galvanizers	4	.....	2 00	10	4	.....	1 00	10	4	.....	2 25	10
Gilders	3	3	.83	10	.....	24	1 00	10	40	.....	2 00	10
Gilders	4	.....	1 50	10	7	.....	3 00	10	.....	.....	.....	.....
Grinders	3	.....	3 50	10	7	.....	1 85	10	10	.....	1 50	10
Grinders	2	.....	2 00	10	2	.....	2 75	10	2	.....	.75	10
Grinders	4	.....	2 50	10	2	.....	1 00	10	.....	.....	.....	.....
Gratifiers	6	.....	2 00	10	25	.....	2 75	10	.....	.....	.....	.....
Gold pencil workers	25	.....	2 50	10	.....	10	1 00	10	.....	.....	.....	.....
Gas fitters	65	.....	3 75	9	25	.....	3 00	9	.....	.....	.....	.....
Gas fitters (steam)	129	.....	3 00	10	8	.....	2 75	10	10	.....	1 00	10
Hod carriers	100	.....	2 50	10	100	.....	2 25	10	200	.....	2 00	10
Hod carriers	200	.....	2 50	9	400	.....	2 25	9	200	.....	2 00	9
Handle makers	10	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Harness makers	125	.....	1 75	8	105	11	2 50	10	8	.....	1 40	10
Harness makers	30	8	1 00	10	.....	12	.75	8	35	.....	2 00	9
Harness makers	4	.....	1 75	10	5	.....	6 08	10	5	.....	4 83	9
Hub makers	20	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Hingers	10	.....	.50	10	.....	.....	.....	.....	.....	.....	.....	.....
Hatters	7	.....	4 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Heelers	4	.....	3 00	10	4	.....	2 50	10	4	.....	.96	10
Iron workers	4	.....	1 50	10	47	.....	2 40	10	100	.....	2 25	9
Iron workers	75	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Iron roof workers	7	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Inseamers .....	.....	3	1 25	10	.....	12	1 00	10	.....	.....	.....	.....
Inspectors	23	.....	1 45	10	2	.....	.50	10	1	.....	1 75	10
Iron punchers	1	.....	3 00	10	1	.....	2 00	10	.....	.....	.....	.....
Ice cream makers	4	.....	1 66	10	7	.....	1 50	10	14	4	1 25	10
Luk makers	11	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Japanners	3	.....	.52	10	30	.....	1 66	10	9	.....	1 75	10
Japanners	2	.....	2 00	10	1	.....	.96	10	2	.....	3 00	10
Joiners	4	.....	2 50	10	3	.....	1 50	10	.....	.....	.....	.....
Jiggers	2	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Jelly makers	2	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Kettle hands	7	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Kiln men	2	.....	1 66	10	2	.....	1 40	10	.....	.....	.....	.....
Knitters .....	.....	40	.75	10	4	15	1 00	10	25	30	.85	10
Knitters .....	.....	85	.67	10	.....	45	.60	10	45	20	1 00	10
Knitters .....	.....	100	.50	10	.....	65	.45	10	15	18	1 10	10
Laborers	1,022	.....	1 50	9	189	.....	1 35	10	30	.....	2 75	10
Laborers	80	.....	3 00	10	80	.....	1 64	10	172	.....	1 50	10
Laborers	52	.....	.80	10	399	.....	1 60	10	154	.....	1 40	10
Laborers	187	.....	1 75	10	110	.....	*.4	10	.....	.....	.....	.....
Laborers	160	.....	1 30	10	218	.....	1 70	10	.....	3	1 85	10
Laborers	30	8	.50	10	263	.....	2 00	10	245	.....	1 50	10
Laborers	117	.....	2 15	10	158	.....	2 25	10	117	.....	2 50	10
Laborers	255	.....	1 25	10	140	.....	1 17	10	210	.....	1 40	10
Laborers	118	.....	1 38	10	125	.....	.75	9½	100	.....	.50	10
Laborers	75	.....	1 79	10	10	.....	2 40	10	41	.....	1 47	10
Laborers	300	.....	1 50	12	17	.....	.25	10	90	.....	1 67	10
Laborers	50	.....	1 43	10	40	.....	1 90	10	10	.....	1 66	10
Laborers	11	.....	2 33	10	40	.....	1 16	10	16	.....	2 00	10
Laborers	68	.....	1 75	9	230	.....	1 00	10	179	.....	1 66	9
Laborers	134	.....	.66	10	184	.....	1 65	10	185	.....	1 33	9
Liners	7	.....	1 19	9	.....	.....	.....	.....	.....	.....	.....	.....
Loopers .....	.....	8	.68	10	1	.....	2 75	10	5	.....	2 00	9
Lathe hands	2	.....	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Lock makers	900	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Locksmiths	11	.....	2 00	10	8	.....	1 75	10	11	.....	1 50	10

*4 20 cents ear of 50 bushels.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Cincinnati—Continued.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Layer-outs.....	2	.....	\$3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Levelers	2	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Lithographers	4	.....	4 16	8	28	.....	\$7 00	9	14	.....	\$5 00	9
Lacers .....	.....	48	50	10	.....	10	75	10	.....	5	40	9
Leather splitters	11	.....	1 50	10	22	.....	1 40	10	10	.....	1 25	10
Lathers.....	500	.....	*1	10	.....	.....	.....	.....	.....	.....	.....	.....
Lasters.....	86	.....	2 50	10	10	.....	1 16	9	10	.....	2 40	10
Lasters.....	50	.....	2 25	10	12	.....	2 75	10	35	.....	2 00	10
Lasters.....	5	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Machine hands	439	101	2 00	10	28	.....	1 66	9	91	.....	1 75	10
Machine hands	74	10	1 70	10	34	.....	2 15	10	94	16	1 50	9
Machine hands.....	65	80	75	10	12	.....	2 10	10	48	.....	1 66	10
Machine hands.....	44	.....	1 45	10	13	40	50	10	48	.....	1 60	9
Machine hands.....	46	20	1 25	10	54	.....	2 75	10	53	.....	2 50	10
Machine hands.....	40	.....	3 00	10	50	.....	1 83	10	25	.....	2 25	10
Machine hands	43	.....	1 41	9	112	.....	1 91	10	22	65	1 00	10
Machine hands .....	.....	86	1 30	10	.....	42	83	10	.....	12	88	10
Machinists.....	44	.....	2 15	10	534	.....	2 50	10	87	.....	2 20	10
Machinists.....	76	.....	1 50	10	44	.....	1 52	10	33	.....	1 70	10
Machinists.....	37	.....	2 38	10	416	.....	2 00	10	31	.....	3 25	10
Machinists.....	40	.....	2 75	10	34	.....	2 65	9½	34	.....	1 12	9½
Machinists	244	.....	2 25	10	77	.....	2 70	10	54	.....	3 00	10
Masons (stone)	600	.....	3 00	9	.....	.....	.....	.....	.....	.....	.....	.....
Malsters.....	150	.....	2 30	10	.....	.....	.....	.....	.....	.....	.....	.....
Marbleizers	1	.....	3 33⅓	10	1	.....	3 50	10	2	.....	3 00	10
Marbleizers.....	1	.....	3 17	10	1	.....	2 50	10	.....	.....	.....	.....
Moulders	82	.....	2 39	10	200	.....	2 75	9½	168	.....	2 50	10
Moulders	31	.....	3 25	10	49	.....	2 25	10	44	.....	3 39	10
Moulders	23	.....	2 40	10	102	.....	3 00	10	58	.....	3 50	10
Moulders	209	.....	2 80	10	32	.....	3 75	9	23	.....	2 30	10
Moulders	46	.....	2 33	9	29	.....	2 76	10	32	.....	2 00	10
Moulders	33	.....	2 66	10	.....	.....	.....	.....	.....	.....	.....	.....
Millers.....	5	.....	2 10	10	10	.....	2 50	10	3	.....	1 66	10
Millers.....	2	.....	2 16	10	2	.....	2 75	10	2	.....	1 00	10
Millers.....	3	.....	2 50	10	6	.....	3 00	10	8	.....	2 00	10
Millers.....	7	.....	1 87	10	.....	.....	.....	.....	.....	.....	.....	.....
Mantle makers.....	7	4	1 50	10	13	.....	1 75	10	.....	25	1 25	10
Machine repairers.....	7	.....	1 75	10	3	.....	2 00	10	5	.....	1 50	10
Metal makers	10	.....	66	10	5	.....	75	10	.....	.....	.....	.....
Mould makers.....	3	.....	3 67	10	5	.....	1 75	10	.....	.....	.....	.....
Managers	3	.....	3 00	10	5	.....	4 00	10	2	.....	6 00	8
Managers	2	.....	8 00	10	3	.....	4 00	8	2	.....	2 5	10
Managers	2	.....	6 50	10	2	.....	2 00	10	2	.....	2 50	10
Managers	4	.....	5 00	10	1	.....	5 67	8	1	.....	3 86	10
Managers	2	.....	6 00	9	2	.....	5 00	9	1	.....	10 00	14
Managers	3	.....	4 50	10	1	.....	10 00	9	1	.....	5 50	10
Millwrights.....	18	.....	2 25	10	59	.....	3 00	10	8	.....	2 50	10
Millwrights.....	5	.....	6 00	10	3	.....	2 75	10	.....	.....	.....	.....
Mounters	10	.....	1 67	10	15	.....	2 50	10	60	.....	2 10	10
Mounters	1	14	70	10	.....	3	2 00	10	.....	6	25	10
Mounters	4	1	1 25	10	66	.....	2 70	9½	.....	.....	.....	.....
Milliners .....	.....	1800	*2	10	.....	.....	.....	.....	.....	.....	.....	.....
Oilers	8	.....	1 50	10	2	.....	3 00	10	3	.....	1 75	10
Oilers	2	.....	1 60	10	.....	.....	.....	.....	.....	.....	.....	.....
Ornamenter's	20	.....	1 50	10	11	.....	75	10	3	.....	2 50	10
Ornamenter's.....	.....	4	1 35	10	6	.....	2 25	10	.....	.....	.....	.....
Oil makers	3	.....	1 50	10	2	.....	1 75	10	4	.....	1 25	10
Presidents	2	.....	5 00	10	3	.....	4 00	10	.....	.....	.....	.....
Pumpers	2	.....	1 50	10	3	.....	1 75	10	.....	.....	.....	.....
Piecers	12	.....	29	10	10	.....	42	10	.....	.....	.....	.....
Purifiers	4	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Pressmen	7	.....	1 00	10	3	.....	4 50	10	.....	5	58	10
Pressmen	5	.....	2 75	10	.....	2	1 00	10	3	.....	3 50	10
Pressmen	17	.....	1 82	9	1	.....	4 25	9	2	.....	50	10
Pressmen	28	.....	2 50	10	30	.....	3 00	10	8	.....	2 25	10

*1 \$1.60 per thousand. *2 No wages given.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Cincinnati—Continued.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Pressmen	27	.....	\$1 50	10	4	.....	\$1 17	10	7	.....	\$1 90	10
Pressmen	5	.....	1 66	10	14	.....	1 92	10	35	.....	2 00	10
Pressmen	5	.....	2 30	10	5	.....	75	10	5	.....	60	10
Platers	6	.....	1 17	10	2	.....	3 00	10	3	1	2 50	10
Platers	80	1	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Puddlers	21	.....	3 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Pipe coverers	3	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Painters	4	.....	1 75	10	193	.....	1 75	10	300	.....	1 50	10
Painters	304	.....	2 00	10	83	.....	2 25	10	45	.....	3 00	9
Painters	300	.....	2 50	10	12	.....	1 00	10	80	.....	2 20	10
Painters	16	.....	2 50	8	14	.....	2 04	10	64	.....	1 67	10
Painters	12	.....	1 65	9	8	.....	1 20	10	200	.....	2 25	9
Painters	44	.....	1 45	10	75	.....	1 70	10	13	.....	3 50	9
Painters	7	.....	67	9	.....	.....	.....	.....	.....	.....	.....	.....
Paper hangers	300	.....	*1	10	3	.....	1 05	10	23	.....	2 00	10
Planers	6	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Pump makers	14	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Pill makers.....	14	26	60	10	.....	.....	.....	.....	.....	.....	.....	.....
Pasters.....	36	14	1 00	10	.....	4	1 25	10	.....	.....	.....	.....
Pressers.....	2	.....	2 50	9	14	.....	1 00	10	27	.....	35	10
Pressers.....	.....	1	2 00	9	.....	.....	.....	.....	.....	.....	.....	.....
Paper carriers	49	.....	2 00	10	42	.....	1 50	10	52	.....	1 25	10
Proof makers	1	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Provers	4	.....	3 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Porters.....	4	.....	2 50	10	25	.....	66	10	3	.....	1 33	10
Porters.....	5	.....	1 44	10	16	.....	2 00	10	10	.....	1 00	10
Porters	5	.....	75	10	4	.....	85	10	23	.....	50	10
Porters.....	10	.....	1 66	8	6	.....	1 25	10	26	.....	1 50	10
Porters.....	5	.....	2 50	9	6	.....	1 50	9	7	.....	2 00	9
Porters.....	2	.....	1 75	10	8	.....	50	9	18	.....	50	12
Plasterers	200	.....	3 50	9	300	.....	3 00	9	100	.....	2 75	10
Proof readers.....	2	.....	3 33	10	2	.....	3 00	10	.....	2	1 25	10
Plumbers	115	.....	3 50	9	100	.....	2 50	10	200	.....	3 00	10
Plumbers	80	.....	3 00	9	.....	.....	.....	.....	.....	.....	.....	.....
Pan tenders.....	2	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Peater	1	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Pipe layers	2	.....	2 35	10	.....	.....	.....	.....	.....	.....	.....	.....
Polishers	50	.....	2 00	10	25	.....	1 50	10	12	.....	1 75	10
Polishers	10	.....	50	10	2	.....	2 25	10	35	.....	1 33	10
Polishers	7	.....	1 60	10	10	.....	1 80	10	4	.....	2 50	10
Polishers	40	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Press feeders.....	20	14	1 00	10	4	.....	2 00	10	6	.....	75	10
Press feeders.....	2	.....	1 22	10	.....	6	1 15	10	10	.....	1 16	10
Press feeders.....	4	.....	58	10	7	1	1 00	10	30	.....	3 00	10
Press feeders.....	8	.....	50	10	50	.....	1 66	10	.....	.....	.....	.....
Pattern makers	10	.....	2 85	10	7	.....	2 75	10	20	.....	3 00	10
Pattern makers.....	7	.....	2 95	10	3	.....	2 25	10	2	.....	1 83	10
Pattern makers.....	6	.....	2 55	10	5	.....	2 50	10	5	.....	4 00	10
Pattern makers.....	5	.....	3 33	10	5	.....	2 80	10	5	.....	2 50	10½
Pattern makers	3	.....	2 45	10	40	.....	2 00	10	.....	5	1 17	10
Packers	3	.....	1 60	10	5	.....	2 65	10	7	.....	3 00	10
Packers .....	.....	6	70	10	96	1	1 50	10	7	.....	1 67	10
Packers .....	.....	2	87	10	2	.....	3 33	8	1	.....	2 35	10
Packers	102	.....	1 60	12	5	.....	58	10	6	.....	1 66	10
Packers	4	.....	85	10	24	4	1 00	10	5	10	1 25	10
Packers	2	.....	1 83	10	38	.....	2 25	10	5	.....	1 80	10
Packers .....	.....	5	80	10	24	.....	2 50	10	1	.....	1 65	10
Packers	11	8	75	10	.....	8	60	10	.....	9	45	10
Packers	44	.....	1 75	10	.....	20	50	10	1	.....	83½	10
Packers .....	.....	22	62	10	40	.....	2 00	10	.....	.....	.....	.....
Roofers	8	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Reamers	3	.....	75	10	11	.....	1 85	10	.....	.....	.....	.....
Renovators	2	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Range makers	35	.....	2 55	10	.....	.....	.....	.....	.....	.....	.....	.....
Rulers	3	.....	2 50	10	2	.....	55	10	.....	.....	.....	.....
River hands	2	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....

*1 Piece work.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Cincinnati—Continued.

Occupation.	No. employed.		Wages per day.	Hours of labor daily.	No. employed.		Wages per day.	Hours of labor daily.	No. employed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Rubbers	26		\$1 50	10	4		\$1 65	10	4		\$1 40	10
Rubbers	4		1 75	10	5		2 00	10				
Robe makers.....	9		1 30	9								
Rollers.....	5		6 00	10								
Reporters	2		3 00	10	25		5 00	10	11		2 75	10
Reporters	15		2 00	10	12		2 20	10				
Rivet heaters.....	2		75	10								
Repairs	4		1 75	10								
Ruffers	9		1 75	10								
Strippers.....	96	24	50	8	4		54	8	28		75	8
Strippers.....		4	40	8	8	100	60	8	28	40	45	8
Strippers.....	76	72	58	8	32	28	55	8		4	1 66	10
Strippers.....		16	80	9	68	26	33	8				
Saw setters.....	1		2 25	10	1		1 75	10				
Sawyers.....	1		1 75	10	7		2 00	10	2		1 85	10
Sawyers.....	5		3 00	10	7		1 50	10	1		2 50	10
Sawyers.....	5		1 57	10	7		1 83	10	3		2 25	10
Stone sawyers.....	3		1 66	10								
Stenographers		1	1 83	10		1	1 66	10		3	1 00	10
Stenographers	1		2 50	10	2		1 16	10	1		3 50	9
Stenographers	2		2 00	9	1		3 00	8		1	2 50	10
Stenographers		9	1 50	10		3	3 00	10		2	1 33	10
Stenographers		1	2 00	8		1	1 75	10		1	1 00	9½
Stenographers		1	1 40	9		1	1 66	9				
Stocking makers.....	5		1 25	10								
Stock keepers.....	5		1 00	10	6		1 50	10	4		1 75	10
Stock keepers.....	3		3 00	10	5		1 33	9	6		1 50	9
Stock keepers.....	2		1 50	9½	2		2 50	10	3		1 35	10
Stock keepers.....	5		1 00	9½	5		75	10	26		2 00	10
Stock keepers.....	8		1 70	10	8		3 00	9				
Smelter	1		1 67	10								
Sheet iron workers.....	6		2 00	10	25		1 50	10				
Screen makers.....	2		2 09	10								
Solicitors	3		3 50	10	4		3 00	9	4		3 16	10
Solicitors	3		1 75	10	7		2 00	9	11		2 50	10
Solicitors	2		2 00	10	1		3 00	10	14		4 00	10
Solicitors	5		2 75	10	5		4 50	10	2		1 50	8
Solicitors	1		2 33	10	1		1 00	10	1		1 35	10
Solicitors	5		4 25	10								
Sponger	1		2 00	10								
Sewers		2	75	10		128	1 25	10		3	70	10
Sewers		15	1 25	9		1	1 16	9		2	2 00	10
Sewers	3	26	1 50	10	4	2	1 75	10	100	47	1 00	10
Sewers		1	75	9		21	85	10		2	50	10
Spinners.....	2	207	75	10		12	83	10		1	80	10
Spinners.....	2	5	1 00	10	10		1 83	10				
Superintendents.....	1		5 16	10	1		2 62	10	1		2 00	10
Superintendents.....	1		9 00	10	3		8 00	10	1		6 66	10
Superintendents.....	1		3 00	8	1		3 33	9	12		5 00	10
Superintendents.....	17		4 00	10	3		2 75	10	1		2 25	10
Superintendents.....	1		20 00	10	2		3 00	12	1		5 00	10
Superintendents.....	1		4 00	9	1		4 00	9½	1		3 35	10
Superintendents.....	4		3 00	10	6		3 33	10	1		16 00	10
Superintendents.....	1		3 20	10	2		4 00	12	1		2 40	10
Superintendents.....	1		4 50	10	3		2 50	10	1		4 25	10
Superintendents.....	5		6 00	10	2		10 00	10	1		4 80	10
Stranders	11		2 50	10								
Shuttle hands.....	4		2 50	10								
Slaters	13		3 00	10								
Stereotypers	6		1 59	10	6		2 50	10	2		2 05	10
Stereotypers	1		4 00	10	5		2 00	10				
Sizers	3		75	10								
Stampers	1		1 00	10		1	35	10				
Salesmen	4		2 78	10	25		2 00	10	6		4 33	10
Salesmen	1		*	10	5		4 16	10	2		3 25	10
Salesmen	46		3 50	10	1		2 65	10	26		4 25	10

*8 5 per cent.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Cincinnati—Continued.

Occupation.	No. employed.		Wages per day.	Hours of labor daily.		No. employed.		Wages per day.	Hours of labor daily.		No. employed.		Wages per day.	Hours of labor daily.
	Men.	Women.				Men.	Women.				Men.	Women.		
Salesmen	1		\$2 33	10		4		\$2 12	10		5		\$5 25	10
Salesmen	2		2 08	10		9		7 50	10		5		3 33	10
Salesmen	36		6 00	10		5		1 75	10		4		3 00	10
Salesmen	4		7 00	10		3		3 60	10		1		2 87	10
Salesmen	1		3 85	10		27		4 00	8			4	1 25	10
Salesmen	3		1 50	10		77		5 00	10		3		4 00	10
Salesmen	46		3 00	8		1		4 50	10		3		4 17	10
Salesmen	3		*9	10		3		10 00	10		9		2 43	10
Salesmen	24		2 50	10		17		2 25	10		28		4 00	9
Salesmen	1		4 80	10		1		9 00	10		1		8 00	10
Salesmen	12		5 00	10		2		15 00	10		21		2 07	8
Salesmen		2	1 26	10		5		3 00	10		25		1 75	9
Salesmen	3		3 20	10		1		4 16	9					
Safe builders.....	400		2 00	10										
Shippers.....	1		1 33	10										
Stone setters.....	4		4 50	10		3		2 00	10					
Saw smithers.....	16		2 00	10										
Saw temperers.....	3		2 00	10										
Soap makers.....	4		2 50	9		209		1 45	10		105		73	10
Spoolers		8	45	10										
Stair builders.....	10		2 50	10		19		2 75	10		25		3 00	10
Stair builders.....	20		3 50	10										
Silver workers.....	8		2 25	9		2		2 00	9		38		1 90	9
Silver workers.....	150		1 80	9										
Stenciler.....	1		2 75	10										
Sand paperers.....	1		1 50	10		6		1 10	10		4		61	10
Stampers	1		3 00	10			2	50	10		6		2 00	10
Scrowers.....	3		1 50	10										
Stokers	25		3 00	10		25		2 25	10					
Saw makers	13		2 35	10										
Spring makers.....	2		1 82	10										
Stripers	1		4 00	10										
Spoke makers.....	9		1 50	10		9		1 80	10					
Tackers	12	1	1 00	10			7	50	10					
Tent makers.....	7		1 75	10			9	83	10					
Truckers.....	1		1 50	10		2		1 75	10					
Tanners	128		1 60	10		89		2 50	10		44		1 50	10
Tanners	140		1 83	10										
Teamsters	28		2 25	10		2		2 25	8		28		1 52	9
Teamsters	2		1 80	12		7		1 83	10		23		2 30	10
Teamsters	200		2 16	10		3		1 60	10		12		1 50	10½
Teamsters	16		1 90	10		31		1 80	10		105		1 75	10
Teamsters	30		2 00	9		2		1 67	9		1		1 16	10
Teamsters	4		2 16	10		24		1 42	9		1		1 25	10
Teamsters	116		2 00	10		26		1 66	10		7		2 25	12
Teamsters	1		1 00	12		4		2 00	12		3		1 00	10
Teamsters	2		1 90	9		4		1 65	10		50		1 87	10
Teamsters	1		2 30	10		11		2 15	10		3		2 58	10
Teamsters	2		1 35	10		1		1 40	10		2		1 10	10
Teamsters	1		1 33	10		3		1 50	9		20		1 75	12
Teamsters	74		1 50	10										
Trunk makers.....	44		1 75	10		20		2 00	10					
Turners.....	33		2 50	10		2		2 33	10		3		2 25	10
Turners.....	1		1 66	10		2		1 50	10		16		2 00	10
Turners.....	3		2 00	9½		8		1 91	10		15		3 00	10
Trimmers.....	110		2 50	10		48		1 75	10			26	75	9
Trimmers.....		22	1 25	10		25		2 55	10		2		1 60	10
Trimmers.....	16		3 60	10			4	50	10		91		2 00	9
Trimmers.....		34	1 00	10		49		3 00	10		10		1 05	10
Trimmers.....		8	1 35	10		4		2 75	10		5		4 50	10
Trimmers.....	9		3 29	10		13		1 50	10			10	1 66	10
Trimmers.....	4		1 70	10		5		83	9		18		1 27	10
Trimmers.....		17	80	10		2		2 66	10		8		2 42	10
Trimmers.....		2	1 10	10		1		70	10					
Transferers	14		3 00	10										
Top makers.....	10		1 50	10										

*9 Commission.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Cincinnati—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Telegraphers	4	.....	\$3 57	10	1	.....	\$3 00	10	.....	.....	.....	.....
Tile cutters	15	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Tinners.....	6	.....	2 75	10	6	.....	2 25	9½	5	.....	\$2 50	10
Tinners.....	56	.....	2 00	10	4	.....	1 65	10	22	.....	2 25	10
Tinners.....	6	.....	2 10	10	27	.....	1 75	10	5	.....	1 45	10
Tool makers.....	11	.....	2 50	10	3	.....	2 75	10	.....	.....	.....	.....
Tallow renovaters.....	2	.....	2 87	10	3	.....	2 00	10	.....	.....	.....	.....
Tailors.....	15	.....	4 00	9	.....	21	1 18	9	370	.....	1 25	10
Tailors.....	745	.....	50	10	4	.....	1 50	9	.....	2	1 60	9
Tailors.....	4	.....	2 50	10	3	.....	2 25	10	10	11	1 00	10
Up-fitters	12	.....	1 25	10	24	.....	2 25	10	6	.....	1 66	10
Up-fitters	12	.....	1 90	10	9	.....	1 50	10	6	.....	1 75	10
Up-fitters	6	.....	2 00	10	3	.....	3 00	10	.....	.....	.....	.....
Upholsterers.....	3	.....	60	10	7	.....	1 90	10	38	.....	2 00	10
Upholsterers.....	25	25	1 25	10	8	.....	2 67	10	2	.....	2 92	10
Upholsterers.....	2	.....	1 75	10	.....	6	50	10	3	6	75	10
Upholsterers.....	.....	6	1 00	10	8	.....	2 50	10	.....	.....	.....	.....
Varnish makers	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Varnishers	4	4	50	10	35	.....	1 66	10	26	.....	2 00	10
Varnishers	22	.....	75	10	67	.....	1 67	10	158	.....	1 75	10
Varnishers	17	.....	1 40	10	6	.....	1 65	10	4	.....	2 25	10
Varnishers	4	.....	1 25	10	97	.....	1 50	10	2	.....	1 60	10
Varnishers	3	.....	40	10	6	.....	1 70	10	7	.....	1 35	10
Varnishers	13	.....	1 36	10	4	.....	2 04	10	.....	.....	.....	.....
Veneerers.....	2	.....	1 55	10	.....	.....	.....	.....	.....	.....	.....	.....
Vampers.....	2	.....	1 50	10	.....	5	60	10	.....	.....	.....	.....
Wrappers .....	.....	126	60	8	75	73	1 00	9	202	150	75	9
Wrappers	11	12	1 67	10	4	8	1 75	10	3	2	1 45	10
Wrappers	200	108	42	9	200	100	50	9	75	125	35	9
Wire makers	130	.....	1 75	10	23	.....	2 25	9	13	.....	2 00	9
Wash-house hands.....	10	.....	2 45	10	.....	.....	.....	.....	.....	.....	.....	.....
Woodworkers.....	20	.....	2 35	10	49	.....	2 50	10	18	.....	1 50	9
Woodworkers.....	70	.....	3 00	10	54	.....	2 25	9	21	.....	2 00	9
Woodworkers.....	64	.....	1 85	9	61	.....	2 25	10	1	.....	1 65	10
Woodworkers.....	4	.....	75	10	1	.....	1 25	9	1	.....	1 70	9½
Woodworkers.....	1	.....	75	9½	1	.....	2 10	10	23	.....	2 00	10
Woodworkers.....	8	.....	2 00	9	1	.....	2 66	10	.....	.....	.....	.....
Weighmen.....	3	.....	2 00	10	1	.....	1 66	10	2	.....	2 33	10
Watchmen.....	1	.....	1 35	10	4	.....	1 75	12	2	.....	2 50	9
Watchmen.....	2	.....	1 33	10	1	.....	1 66	9	1	.....	1 43	12
Watchmen.....	1	.....	2 50	10	1	.....	2 00	9½	3	.....	1 75	10
Watchmen.....	10	.....	1 50	10	10	.....	2 00	10	7	.....	1 66	10
Watchmen.....	2	.....	2 25	10	1	.....	1 50	8	1	.....	1 60	10
Wheel drillers.....	1	.....	2 00	10	10	.....	1 50	10	9	.....	42	10
Wheel makers.....	63	.....	1 66	9	33	.....	2 25	10	.....	.....	.....	.....
Weavers .....	.....	7	75	10	2	70	*10	10	.....	42	*11	10
Weavers	15	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Wool graders	12	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Willow workers.....	3	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Yeast makers.....	1	.....	4 00	10	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 58,596. Total number of women employed, 13,396.

*10 2½ cents per yard. *11 33 cents per yard.

CINCINNATI.

Before entering upon the work in Cincinnati a number of representative workingmen were called together for counsel as to the best way to proceed. It was decided to place M. D. Connolly, editor of the Unionist, in charge. He was given one assistant, and he should have the credit for the remarkable showing made in that city. The results are marvelous. It seems incredible, but the truth is stamped on the face of the returns. Cincinnati is, in my judgment, for its size, the greatest manufacturing city in the United States. Nowhere else are there so many manufacturing establishments, or as many persons employed in industrial pursuits on the same number of contiguous acres. While Cincinnati

excels in many manufactories, a specialty is made of nothing; the great variety of her manufactories being as conspicuous as the number. Because of this diversity the city is certain of a large degree of prosperity. If a portion of her industries meet reverses the great majority are sure to be prosperous. and with them the city moves ahead, while towns and cities dependent upon a single industry are brought to distress when that industry is depressed. Cincinnati, with one exception, makes more and better shoes than are made in any other city in the United States. More people find employment making clothing than are employed in those industries in New York or Philadelphia. More skilled iron workers find employment there than in Pittsburgh. It is the greatest safe manufacturing center in the country, and more furniture is made there than in any other city whose statistics are at hand. More buggies than are made in Philadelphia. More men are employed in the brewing industry than in Chicago or Milwaukee. There are but three American cities with more printing-offices, and none with more prosperous papers or better paid printers. There is, in short, not a product of the forest, the farm or the mine that is not being transformed by her busy artisans into some article of utility and beauty. Speaking of the wonders of Cincinnati, Mr. Connolly says:

"The casual passer along our streets in front of what he supposes to be merely vast storehouses knows nothing of the busy industries constantly plying far above his head, away up in the fifth and sixth stories. Up there, out of sight and out of hearing of the street, are thousands of busy hands deftly shaping the useful and the beautiful articles displayed in the stores below, and away up there sit Invention suggesting, Ingenuity contriving, and Skill perfecting the very many things which not only conduce to our material comfort, but which elevate the thoughts, and prompt us to higher aims and nobler purposes. Pass along those streets so seemingly quiet at midday, at the close of working hours in the evening and see the streams of workmen emerge from these up-in-the-air shops, and you wonder at the capacity of the buildings. Reflect but a moment upon the vast amount of work that all these persons are capable of having accomplished in a day and the story of Cincinnati's industry, energy, and enterprise, and the location of her inexhaustible mines of wealth are told you. A walk upon the crowded streets at this hour tells at a glance that more than sixty thousand persons regularly employed in manufacturing, are paid weekly for their work, and are thus enabled to carry comforts and even luxuries to homes capable of being made happy; and that the product of their industry adds \$150,000,000 in value annually to the substantial wealth of the city. To afford this employment and produce such results, more than five thousand manufactories are in operation, occupying real estate worth \$52,000,000, and employing a cash capital in stock and machinery of some \$63,000,000."

The tobacco trade of Cincinnati has developed marvelously within a few years. In 1860 the production was but one-half million and now it is five times that amount. Then only about 500 men were employed in this industry; now the number is nearly 3,000.

It has been impossible to investigate the union and non-union elements in Cincinnati, for the reason that while there are here a large element of labor that is manly, dignified and fearless in insisting upon its rights, there is also an element conspicuous only for its cowardly and craven disposition. There are shops that have Knights of Labor in them, and these same knights have denied that there was one in their place, so fearful were they of losing their places if their identity were made known. Some of the trades are well organized and well paid. This is true of the printers, moulders machinists, carpenters, painters, cigar makers and shoe fitters; and the numerical strength of the Knights of Labor is large. The aggregate membership of labor organizations is about 18,700, including men and women.

It has been difficult to secure the wages of women and children who constitute a large proportion of the city's 60,000 working people. A boy likes to feel that he is getting good wages, and when inquired of will answer twice the amount he receives. Women are ashamed to admit their meager remuneration, and won't until driven almost to desperation by their necessities. Good girls can obtain good wages in the kitchen or for doing house-work; but girls dislike this work, not so much because of the labor but the humiliation that attends it. To be a kitchen-girl is to be a menial; not only a menial but the treatment she receives, as a rule, constantly reminds her of it. The conduct of the people who employ girls to do house-work is fast driving every girl of spirit into other less remunerative employment. Upper-tendom complains of the difficulty of securing good girls, but it has its own follies to blame. When it learns to treat a good, pure, true working girl as a hard working, respectable girl should be treated, the character of the help will be improved. The poor parent, whose girls must find some employment, is brought face to face with a stern reality. She must either go into somebody's kitchen and be somebody's slave, or into some shop or factory where the wages will not support her. The devoted parent views it in this light, but too often the reality is worse. It's "kitchen slave" or "mistress." That's the choice in numerous cases as investigation shows. The working girls of Cincinnati comprise a large part of its population. They are employed largely in the shoe factory, in stogie, cigar and cigarette making, dressmaking, cloak and clothing making, nut and bolt, washer-works, box-making, regalia making—in short, in all the light manufacturing so abundant in the city. They are educated in schools that make them aspiring, restless, sensitive and dissatisfied with the condition assigned them. They see luxury and care on one side—poverty, hard work and injustice on the other. Their pride keeps them out of the kitchen and they go into the factory. Here the compensation will not satisfy their wants. They enter a stogie factory where the competition of boys and other girls is so great that wages become only nominal. They encounter the same

competition in whatever direction they turn. They become accustomed, in many instances, to vulgar and even ob-scene conversation. Their life in a factory familiarizes them with the opposite sex. They look up to their employers and foremen and are grateful for employment and the attention their tender years and natures crave. Is it surprising that they often become inmates of the dens of iniquity? They are driven to them by society and then society builds prisons in which to incarcerate their ostracised persons. In pursuing this investigation this Bureau has encountered many touching illustrations of this point, not only in Cincinnati but in Columbus and Cleveland.

In an East Liverpool pottery a widow with three children was inquired of as to her wages and cost of living. She received 75 cents a day in the pottery that worked but 38 weeks in the year. This would allow her \$170 for the year; she paid \$50 rent, which left her \$120, or 33 cents a day to clothe and feed a family of four, or 8 cents a day for each. She managed to live. She was a noble, virtuous, self-sacrificing woman; but what a penalty to pay as the price for living and how many there are who can not pay it as nobly as this woman. 25 cents a piece is the price in some shops for making fancy aprons. It takes a day of long hours to make an apron. 36 cents a dozen for making shirts is the price paid in a Cleveland establishment. A girl can make a dozen a day if she has work, but often the work does not come: she then sits all day waiting. She must be there in time for prayer in the morning, for this is a christian firm that opens the labors of the day with a plea for divine blessing and guidance, and they must remain for the benediction at night, work or no work. No one deplors this condition more than the manufacturers themselves, but the strong competition, the flood of girls, rushing like a mighty torrent into these gainful occupations crowds such results. In many cases, and this is especially true of Cincinnati, the manufacturers themselves are not aware of the wages that prevail. In the cloak and clothing trades they give the work out on contract. Contracting firms take the work and farm it out, sometimes to sub-contractors, and hundreds are employed by these at prices disgraceful to the civilization of this age. The labor organizations of Cincinnati and elsewhere in the State, intelligently directed, could do much toward correcting the evils that abound so conspicuously. They should seek methods for curtailing depressing and destructive competition. They should seek to shorten the hours of labor. If ten thousand girls who now work 12 hours daily, on an average, would work 8 hours, it would create a demand for doing the same work for fifteen thousand girls. This would make the demand for services of the ten thousand so great that wages would naturally advance in accordance with the irrevocable law of supply and demand. It would be equivalent, in its effect, to removing five thousand of the girls from competition in the now over-crowded occupations. What is true of the girls is true of other labor, much of which is suffering in the same way. If something is not done in this line soon, by the working people of our cities, the ravens will have to feed the poorer of the working classes to preserve them from starvation.

Considerable importance is attached to the union and non-union elements of Cincinnati; for that reason this information is obtained and given by organizations. It is as follows:

Brewers' local union, No. 12.....	800
Beer drivers' union.....	350
Malsters' union	150
Coopers' union	400
Butchers' union	300
Bakers' union.....	600
Cigarmakers' union, No. 18	185
Musicians' protective union.....	320
Fresco painters' union.....	75
Millwrights' union	59
Tanners' union	400
Horse-collar makers' union.....	100
Confectioners' union.....	275
Typographical union (English).....	600
Typographical union (German).....	275
Printing pressmens' union.....	175
Iron moulders' (3 unions).....	450
National association stationery engineers, No. 2.....	300
Brewery engineers' union.....	35
'Amalgamated iron and steel workers' union	175
Bricklayers' union.....	375
Plasterers' union.....	200
Plumbers' and gas fitters' union..	250
Carpenters' union, No. 2.....	700
Carpenters' union, No. 209.....	243
Stair builders' union	120
Brotherhood of painters and decorators.....	400
Stone cutters' union	295
Hod carriers' union.....	275
Stone masons' union	600

The shoemakers' is the best organized trade in the city ; 4,600 persons are employed in this industry at fair wages. The Knights of Labor take the lead, controlling the trade. The scale of wages is fixed by arbitration, but the monthly income fluctuates with the season. The organization regulates the employment, so that in dull seasons the work is divided among all and not given out to a favored few, as is the case in some trades. The same price is paid to men and women. They work ten hours a day, in the busy season, 10½. Shoe fitters are a happy lot of girls. In the busy seasons they make \$1.50 a day ; in the dull seasons they average it up at about 50 cents. Working women elsewhere can find an example worth following in the shoe trade of Cincinnati.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Findlay, Hancock County.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Apprentices	5		\$1 00	10	2		33	10				
Boys	6		1 25	10	30		75	10				
Bricklayers	100		3 00	10								
Blacksmiths	1		2 16	10	6		2 25	10	71		2 00	10
Cutters	4		5 00	10	8		6 00	10				
Carriers	5		15	10								
Collector	1		1 40	10								
Cabinet makers.....	4		2 00	10								
Carpenters.....	6		2 40	10	240		2 60	10	12		2 25	10
Clerks in stores	130		1 25	12		29	50	12				
Dressmakers.....		23	75	10								
Engineers.....	3		3 00	10	2		1 50	10	2		1 44	12
Engineers.....	2		1 40	10								
Engravers	3		3 00	10								
Foremen	2		1 66	10								
Finishers	1		2 00	10	2		1 50	10				
Flatteners	2		6 50	10	5		7 00	10				
Furnacemen	10		3 00	10								
Glass blowers.....	10		6 50	10	18		7 00	11	40		3 00	10
Gatherers.....	28		4 00	10								
Girls.....		8	55	10								
Hod carriers	40		1 50	10								
Helpers	4		2 00	10	4		1 75	10	2		1 50	10
Helpers	4		1 00	10	1		70	10	3		1 25	10
Laborers.....	10		1 50	10	6		1 12	10				
Leer tenders.....	7		2 00	10								
Millers	2		1 50	10								
Mask makers.....	7		1 25	10		6	50	10				
Machine men	11		1 92	10	3		1 75	10	6		1 50	10
Machinists.....	16		1 80	10								
Mould makers.....	8		3 00	10								
Moulders	3		1 85	10								
Mixers.....	5		2 00	10								
Office help.....	6		4 00	10	1		3 00	10				
Pot makers	1		3 50	10								
Pot helpers	1		2 00	10	4		3 00	10				
Packers	11		2 00	10	2		2 50	10				
Pattern makers.....	1		2 20	10								
Printers.....	7		1 15	10	8		1 43	10	11		1 25	10
Painters	8		1 75	10	7		1 25	10	61		2 00	10
Plumbers	45		2 25	10								
Plasterers.....	50		2 25	10								
Pressmen	2		1 68	10								
Reporters	2		1 75	10								
Rake makers	22		1 40	10								
Stone masons.....	105		3 00	10								
Teasers	1		3 00	10	2		2 00	10				
Trimmers.....	2		2 00	10								
Teamsters	2		1 80	10	4		1 36	10				
Turner.....	1		2 40	10								
Tinners.....	20		1 75	10								
Temperers.....	2		1 68	10								
Tailors.....	75		3 00	10		4	1 25	10				
Woodworkers.....	2		2 00	10	4		1 50	10				
Yard men	1		1 44	10	3		1 25	10				

Total number of men employed, 1,372. Total number of women employed, 70.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Kenton, Hardin County.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Apprentices	2		\$ 75	10								
Brick makers	2		2 25	10								
Buyer	1		1 50	10								
Blacksmiths	5		1 50	10	10		\$2 00	10	4		\$1 75	10
Blacksmiths	3		2 75	10								
Butter makers	1		1 50	10								
Bricklayers	8		2 00	10								
Book-keepers	1		2 88	10	2		2 00	10	1		1 50	10
Beatermen	2		1 50	10								
Cigarmakers	2		2 00	10								
Compositors	4		1 50	10	13		1 00	10		4	85	10
Core makers	4		1 75	10								
Carpenters	7		2 00	10								
Clerks in stores	38		1 25	10		13	75	10				
Dressmakers		8	75	10								
Drivers	1		2 00	10	1		75	10	12		1 25	10
Drivers	7		1 15	10	3		1 00	10				
Elevator men	2		1 25	10								
Engineers	4		1 75	10	3		1 50	10	1		2 00	10
Engineers	1		1 25	10								
Firemen	1		1 75	10	1		2 00	10				
Foremen	5		2 00	10								
Hod carriers	10		1 50	10								
Helpers	1		34	10		2	50	10	2		75	10
Helpers	20		1 25	10								
Iron workers	28		1 50	10								
Lathe men	2		1 35	10								
Laborers	25		1 25	10	19		1 00	10	10		75	10
Laborers	4		1 55	10								
Log men	2		1 35	10								
Managers	2		3 00	10								
Machine men	2		2 50	10	5		2 00	10				
Mill men	4		1 25	10								
Moulders	13		2 25	10								
Machinists	16		2 75	10								
Millers	2		1 75	10	2		2 50	10				
Painters	4		1 75	10	6		2 00	10	2		1 50	10
Painters	3		1 35	10								
Pattern makers	4		1 75	10								
Packers	2		1 35	10								
Planer	1		1 25	10								
Reporter	1		1 50	10								
Sawyers	6		1 25	10	3		2 00	10	1		1 50	10
Stave cutter	1		2 00	10								
Skimmers	4		1 25	10								
Stone masons	6		3 00	10								
Salesmen	3		2 00	10								
Tailors	11		1 75	10								
Turners	5		2 00	10								
Woodworkers	4		2 00	10	8		1 50	10				
Watchman	1		1 25	10								
Yard inspector	1		1 50	10								

Total number of men employed, 393. Total number of women employed, 27.

Deshler, Henry County.

Blacksmiths	3		2 00	10								
Burner	1		1 25	10								
Brick makers	3		1 25	10								
Compositors	2		1 00	10								
Carpenters	6		1 75	10								
Clerks in stores	2		1 25	10								
Drivers	3		1 25	10								
Engineer	1		1 25	10								
Foremen	1		1 25	10								

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Deshler—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Laborers.....	81	.....	\$1 25	10	15	.....	\$1 35	10	.....	.....	.....	.....
Machinists.....	2	.....	1 85	10	1	.....	1 25	10	.....	.....	.....	.....
Machine hands.....	3	.....	1 10	10	.....	.....	.....	.....	.....	.....	.....	.....
Off-bearer.....	1	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Painters.....	3	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Plasterers.....	4	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Sawyers.....	20	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Stave makers.....	40	.....	1 35	10	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 192. Total number of women employed, none.

Napoleon.

Apprentices.....	2	17	\$ 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Bricklayers.....	5	.....	3 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Brewers.....	2	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Blacksmiths.....	1	.....	1 50	10	10	.....	\$2 00	10	.....	.....	.....	.....
Carpenters.....	4	.....	1 90	10	25	.....	1 75	10	.....	.....	.....	.....
Cutter.....	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Clerks in stores.....	67	.....	1 00	10	.....	3	75	10	.....	.....	.....	.....
Dressmakers.....	.....	10	75	10	.....	.....	.....	.....	.....	.....	.....	.....
Driver.....	1	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Editor.....	1	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Foremen.....	1	.....	2 25	10	1	.....	2 50	10	.....	.....	.....	.....
Firemen.....	2	.....	1 10	10	.....	.....	.....	.....	.....	.....	.....	.....
Hod carriers.....	8	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Laborers.....	15	.....	1 25	10	10	.....	60	10	9	.....	1 10	10
Laborers.....	4	.....	1 30	10	4	.....	1 00	10	4	.....	1 50	10
Machine man.....	1	.....	1 35	10	.....	.....	.....	.....	.....	.....	.....	.....
Millers.....	4	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Oar makers.....	6	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Painters.....	1	.....	1 75	10	6	.....	2 00	10	.....	.....	.....	.....
Pressman.....	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Printers.....	4	.....	1 10	10	1	.....	75	10	1	.....	1 50	10
Plasterers.....	8	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Plankman.....	1	.....	1 40	10	.....	.....	.....	.....	.....	.....	.....	.....
Saw mill men.....	5	.....	1 10	10	.....	.....	.....	.....	.....	.....	.....	.....
Stone masons.....	5	.....	3 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Street laborers.....	8	.....	1 15	10	.....	.....	.....	.....	.....	.....	.....	.....
Trimmer.....	1	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Tailors.....	8	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Woodworker.....	1	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 239. Total number of women employed, 30.

Logan, Hocking County.

Apprentices.....	8	.....	\$ 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Book-keepers.....	3	.....	2 50	10	2	.....	3 00	10	.....	.....	.....	.....
Bricklayers.....	6	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Blacksmiths.....	38	.....	1 50	10	2	.....	1 55	10	.....	.....	.....	.....
Cabinet makers.....	13	.....	2 25	10	4	.....	2 00	10	.....	.....	.....	.....
Carpenters.....	1	.....	2 00	10	22	.....	1 75	10	.....	.....	.....	.....
Clerks in stores.....	192	.....	1 50	13	.....	7	75	13	.....	.....	.....	.....
Dressmakers.....	.....	7	75	10	.....	.....	.....	.....	.....	.....	.....	.....
Draughtsman.....	1	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Engineers.....	1	.....	3 00	10	2	.....	2 00	10	2	.....	1 75	10
Engineers.....	3	1	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Foremen.....	4	.....	2 50	10	3	.....	2 25	10	1	.....	2 00	10
Finishers.....	.....	.....	1 65	10	.....	.....	.....	.....	.....	.....	.....	.....
Helpers.....	2	.....	85	10	.....	.....	.....	.....	.....	.....	.....	.....
Laborers.....	87	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Managers.....	1	.....	5 00	10	1	.....	4 50	10	.....	.....	.....	.....
Machinists.....	4	.....	2 00	10	12	.....	1 90	10	.....	.....	.....	.....
Moulders.....	9	.....	2 25	10	2	.....	2 00	10	.....	.....	.....	.....
Machine hands.....	5	.....	1 40	10	.....	2	80	10	.....	.....	.....	.....

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Monroeville—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Engineers.....	1	.....	\$1 50	10	1	.....	\$1 75	10	.....	.....	.....	.....
Laborers.....	12	.....	1 25	10	2	.....	1 40	10	.....	.....	.....	.....
Millers.....	2	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Plasterers.....	8	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Painters.....	8	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Sawyer.....	1	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Tailors.....	3	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 66. Total number of women employed, 8.

Norwalk.

Boiler makers.....	3	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Book-keepers.....	25	.....	3 00	10	.....	5	1 00	10	.....	.....	.....	.....
Bakers.....	5	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Bellows makers.....	5	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Brewers.....	5	.....	3 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Box makers.....	16	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Bricklayers.....	10	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Blacksmiths.....	42	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Carpenters.....	72	.....	1 75	10	38	.....	1 70	10	.....	.....	.....	.....
Car inspectors.....	25	.....	1 35	10	.....	.....	.....	.....	.....	.....	.....	.....
Compositors.....	42	.....	2 00	10	.....	8	1 00	10	.....	.....	.....	.....
Cigar makers.....	5	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Carvers.....	2	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Case makers.....	18	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Clerks in stores.....	105	.....	1 60	10	.....	40	75	10	.....	.....	.....	.....
Dressmakers.....	.....	50	75	10	.....	.....	.....	.....	.....	.....	.....	.....
Engineers.....	2	.....	1 60	10	.....	.....	.....	.....	.....	.....	.....	.....
Helpers.....	25	.....	1 35	10	.....	.....	.....	.....	.....	.....	.....	.....
Hod carriers.....	4	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Kite makers.....	10	.....	1 50	10	.....	65	55	10	.....	.....	.....	.....
Laborers.....	17	.....	1 25	10	23	.....	1 50	10	100	.....	\$1 15	10
Machinists.....	28	.....	2 25	10	22	.....	2 00	10	.....	.....	.....	.....
Moulders.....	3	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Millers.....	5	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Organ varnishers.....	20	.....	1 40	10	.....	.....	.....	.....	.....	.....	.....	.....
Organ tuners.....	6	.....	2 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Plumbers.....	5	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Painters.....	45	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Plasterers.....	10	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Piano tuners.....	8	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Piano varnishers.....	16	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Planers.....	14	.....	1 90	10	.....	.....	.....	.....	.....	.....	.....	.....
Salesmen.....	17	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Switchmen.....	25	.....	1 35	10	.....	.....	.....	.....	.....	.....	.....	.....
Shoe makers.....	6	1	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Stone masons.....	11	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Tobacco workers.....	6	.....	1 50	10	.....	9	60	10	.....	.....	.....	.....
Teamsters.....	14	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Truckers.....	25	.....	1 35	10	.....	.....	.....	.....	.....	.....	.....	.....
Tailors.....	9	.....	1 75	10	.....	10	75	10	.....	.....	.....	.....
Wood workers.....	26	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 920. Total number of women employed, 188.

Wakeman.

Blacksmiths.....	2	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Coopers.....	2	.....	*	10	.....	.....	.....	.....	.....	.....	.....	.....
Clerks in stores.....	2	.....	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Carpenters.....	10	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Dressmakers.....	.....	4	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....

* 6 to 8 cents per barrel.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Wellston—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.		No. em- ployed.		Wages per day.	Hours of labor daily.		No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.				Men.	Women.				Men.	Women.		
Packers.....	10	.....	\$1 00	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pattern makers.....	3	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pad makers.....	.....	12	50	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rollers.....	2	.....	8 00	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sawyers.....	3	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Shearmen ..	4	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Stove mounters.....	3	.....	2 00	10	.....	5	.....	\$2 25	10	.....	.....	.....	.....	.....
Turners.....	5	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Teamsters	5	.....	1 25	10	.....	13	.....	1 50	10	.....	3	.....	\$1 00	10

Total number of men employed, 439. Total number of women employed, 12.

Steubenville, Jefferson County.

Assorters .....	.....	12	1 00	10	.....	13	75	10	.....	.....	.....	.....	.....	.....
Book-keepers	7	.....	1 54	10	.....	1	.....	1 73	10	.....	3	.....	2 31	10
Book-keepers	1	.....	3 14	10	.....	1	.....	1 75	10	.....	1	.....	2 00	10
Bricklayers	36	.....	3 50	10	.....	40	.....	2 00	10	.....	.....	.....	.....	.....
Clerks.....	27	.....	1 54	10	.....	6	.....	2 30	10	.....	10	.....	2 00	10
Clerks.....	2	.....	1 50	10	.....	.....	1	1 16	10	.....	.....	1	1 54	10
Casters	2	.....	1 25	10	.....	2	.....	1 50	10	.....	.....	.....	.....	.....
Cutters.....	2	.....	1 75	10	.....	3	.....	2 00	10	.....	4	.....	1 54	10
Clay workers.....	20	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Compositors	5	.....	2 00	10	.....	30	.....	1 50	10	.....	.....	.....	.....	.....
Cabinet makers.....	25	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Carpenters.....	13	.....	2 00	10	.....	2	.....	2 25	10	.....	3	.....	1 75	10
Carpenters.....	8	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Catchers	6	.....	4 00	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Decorators.....	12	.....	1 50	10	.....	.....	25	1 25	10	.....	.....	.....	.....	.....
Dragouts.....	7	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Drivers	2	.....	1 35	10	.....	3	.....	1 40	10	.....	13	.....	1 50	10
Drivers	1	.....	2 00	10	.....	7	.....	1 25	10	.....	.....	.....	.....	.....
Engineers.....	7	.....	1 54	10	.....	1	.....	1 66	10	.....	7	.....	1 92	10
Engineers.....	3	.....	2 00	10	.....	1	.....	3 00	10	.....	5	.....	1 50	10
Engineers.....	1	.....	1 75	10	.....	3	.....	2 80	10	.....	.....	.....	.....	.....
Editors	3	.....	1 75	10	.....	5	.....	2 00	10	.....	1	.....	1 54	10
Embalmer	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Foremen.....	8	.....	1 54	10	.....	2	.....	3 00	10	.....	1	.....	3 25	10
Foremen	4	.....	2 50	10	.....	2	.....	2 30	10	.....	4	.....	2 00	10
Foremen	12	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Finishers	10	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Glass blowers.....	303	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Heaters	85	.....	5 00	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Heaters' helpers.....	85	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Helpers (boys)	75	.....	1 25	10	.....	80	.....	1 00	10	.....	.....	.....	.....	.....
Laborers.....	16	.....	1 50	10	.....	287	.....	1 25	10	.....	80	.....	1 40	10
Laborers.....	100	.....	1 45	10	.....	5	.....	2 00	10	.....	36	.....	1 35	10
Laborers.....	15	.....	1 55	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Millers.....	4	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Marble cutters	3	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Moulders	74	.....	2 00	10	.....	10	.....	2 50	10	.....	5	.....	2 25	10
Machinists.....	14	.....	1 75	10	.....	10	.....	2 25	10	.....	.....	.....	.....	.....
Machine hands.....	4	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nailers	75	.....	3 50	10	.....	125	.....	4 00	10	.....	153	.....	5 00	10
Planers	5	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Painter.....	1	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Presser.....	1	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Packers	3	.....	1 00	10	.....	18	.....	1 25	10	.....	95	.....	80	10
Packers.....	10	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pattern makers	3	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Potters.....	50	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Puddlers.....	92	.....	4 00	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Puddlers' helpers.....	93	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Roll hands.....	25	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rollers.....	5	.....	6 00	10	.....	10	.....	4 00	10	.....	8	.....	5 50	10
Straighteners.....	5	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Steubenville—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Spellers.....	20		\$2 25	10								
Stone masons.....	5		2 25	10	2		\$2 00	10				
Stitchers.....	7		1 75	10								
Stockmen.....	10		1 50	10								
Selecters.....	5		1 50	10		5	75	10				
Salesmen.....	4		1 54	10	1		2 50	10	1		\$2 00	10
Salesmen.....	2		2 30	10	3		1 50	10				
Stranders.....	15		1 40	10								
Sawyer.....	1		1 50	10								
Shippers.....	2		2 00	10								
Spellers.....	20		2 25	10								
Stone cutters.....	5		2 25	10	2		2 00	10	8		1 60	10
Tailors.....	6		2 25	10	8		1 75	10				
Tailors.....	6		2 00	10		8	1 00	10		48	1 25	10
Tailors.....		15	1 20	10								
Turners.....	7		1 75	10	2		1 50	10				
Woodworkers.....	4		1 50	10								
Watchmen.....	3		1 50	10	2		1 75	10	1		2 00	10
Watchmen.....	2		1 54	10	2		1 25	10				

Total number of men employed, 2,509. Total number of women employed, 223.

Centerburg, Knox County.

Compositors	2		1 00	10								
Engineers	5		1 50	10								
Laborers	4		1 25	10	2		1 15	10				
Moulders	8		1 50	10	2		1 15	10				
Off-bearing.....	1		1 25	10								
Sawyers.....	2		1 75	10								
Wood workers.....	4		1 25	10	4		2 00	10	5		2 25	10
Wood workers.....	4		1 50	10								

Total number of men employed, 38. Total number of women employed, 0.

Fredericktown.

Blacksmiths	5	1 50	10								
Bricklayers.....	3	2 75	10								
Clerks in stores	10	1 25	10								
Carpenters.....	10	2 00	10								
Cupolaman	1	1 75	10								
Creamerymen	6	1 50	10								
Dressmakers.....	5	1 00	10								
Engineer	1	1 75	10								
Foremen.....	2	1 75	10	1		1 50	10	1		2 50	10
Finisher	1	1 75	10								
Helper	1	1 25	10								
Laborers.....	4	1 00	10	3		1 25	10				
Millers.....	1	2 00	10	1		1 50	10				
Moulders	1	1 50	10	6		2 00	10				
Off-bearers.....	8	1 25	10								
Painters.....	2	1 75	10	6		1 50	10				
Plasterers.....	1	1 50	10								
Sawyers.....	2	1 50	10								
Trimmer	1	1 50	10								
Tailors.....	2	1 50	10								
Wood worker.....	1	1 75	10								

Total number of men employed, 76. Total number of women employed, 5.

Mount Vernon.

Apprentices	18	1 00	10	72	1 75	10	2	1 10	10
Apprentices	1	75	10	2	50	10	.....	.....	.....
Assistants	1	1 25	10	3	2 00	10	.....	.....	.....
Agents	2	3 00	10	.....	.....	.....	.....	.....	.....
Bricklayers	6	3 00	10	.....	.....	.....	.....	.....	.....
Bricksetters	2	1 25	10	.....	.....	.....	.....	.....	.....

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.
Painesville—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Dressmakers .....	.....	8	\$ 75	10	.....	16	\$ 65	10	.....	.....	.....	.....
Engineers.....	2	.....	1 00	10	1	.....	1 25	10	2	.....	\$1 50	10
Engineers.....	1	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Helpers	8	.....	75	10	.....	.....	.....	.....	.....	.....	.....	.....
Hod carriers.....	6	.....	1 35	10	.....	.....	.....	.....	.....	.....	.....	.....
Laborers.....	3	.....	1 30	10	30	.....	1 25	10	2	.....	1 35	10
Laborers.....	21	.....	1 00	10	3	.....	1 10	10	.....	.....	.....	.....
Machinists.....	20	.....	1 75	10	14	.....	2 00	10	15	.....	1 50	10
Machine hands.....	3	.....	1 50	10	8	.....	1 75	10	.....	.....	.....	.....
Moulders	18	.....	2 50	10	12	.....	1 75	10	5	.....	2 00	10
Millers.....	2	.....	2 40	10	2	.....	2 00	10	.....	.....	.....	.....
Pattern makers.....	2	.....	2 10	10	3	.....	2 00	10	.....	.....	.....	.....
Painters	18	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Plasterers.....	7	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Sorters.....	.....	12	75	10	.....	.....	.....	.....	.....	.....	.....	.....
Stone masons.....	4	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Stove mounters	5	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Tailors.....	4	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 298. Total number of women employed, 44.

Ironton, Lawrence County.

Ash men.....	3	.....	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Apprentice	2	1	85	10	5	.....	50	10	1	.....	75	10
Bluers	2	.....	3 00	10	1	.....	2 00	10	.....	3	50	10
Bottom fillers.....	26	.....	1 25	12	28	.....	1 12	12	.....	.....	.....	.....
Brewer.....	1	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Bricklayers	4	.....	3 00	10	1	.....	3 60	10	.....	.....	.....	.....
Book-keeper .....	.....	1	83 ¹ / ₃	10	.....	.....	.....	.....	.....	.....	.....	.....
Boiler makers.....	7	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Boys	30	.....	1 40	10	2	.....	40	10	2	.....	50	10
Boys	2	.....	60	10	6	.....	70	10	3	.....	66 ² / ₃	10
Boys	2	.....	1 00	9	.....	.....	.....	.....	.....	.....	.....	.....
Blacksmiths.....	2	.....	2 75	10	1	.....	2 00	12	5	.....	1 50	10
Blacksmiths.....	1	.....	3 00	10	1	.....	1 87	10	2	.....	2 50	10
Blacksmiths.....	1	.....	3 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Compositors	3	.....	1 25	10	4	.....	1 80	10	7	.....	1 70	10
Catchers	2	.....	3 00	10	2	.....	2 10	10	2	.....	1 50	10
Cinder wheelers.....	1	.....	1 75	10	3	.....	1 15	10	6	.....	1 10	10
Coal shovelers	4	.....	1 15	10	22	.....	1 25	10	8	.....	1 38	10
Coal shovelers	7	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Carpenters.....	1	.....	2 00	10	1	.....	1 50	10	1	.....	1 87	10
Carpenters.....	1	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Coal miners	21	.....	1 35	10	.....	.....	.....	.....	.....	.....	.....	.....
Coal diggers	60	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Cupola tender	1	.....	1 35	10	.....	.....	.....	.....	.....	.....	.....	.....
Cinder snappers.....	8	.....	1 15	10	.....	.....	.....	.....	.....	.....	.....	.....
Cagers	2	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Cart men	3	.....	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Coke strainers.....	2	.....	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Crozer	1	.....	70	10	.....	.....	.....	.....	.....	.....	.....	.....
Coopers.....	20	.....	*1	10	.....	.....	.....	.....	.....	.....	.....	.....
Drivers	4	.....	1 10	10	4	.....	1 50	10	4	.....	1 00	10
Drivers	2	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Dragouts.....	2	.....	2 84	10	.....	.....	.....	.....	.....	.....	.....	.....
Engineers	2	.....	2 00	12	1	.....	1 90	12	2	.....	2 40	12
Engineers	1	.....	1 87	12	1	.....	1 85	12	2	.....	2 25	12
Engineers.....	2	.....	2 75	11	4	.....	1 75	8	1	.....	1 25	10
Engineers.....	2	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Feeders	126	.....	*2	10	.....	.....	.....	.....	.....	.....	.....	.....
Foremen.....	3	.....	3 00	10	1	.....	4 00	10	.....	.....	.....	.....
Firemen	2	.....	1 55	10	2	.....	1 40	10	.....	.....	.....	.....
Hookups.....	2	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....

*1 1³/₄ cents per keg. *2 10 cents per card rate.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Ironing—Continued.

Occupation.	No. employed.		Wages per day.	Hours of labor daily.		No. employed.		Wages per day.	Hours of labor daily.		No. employed.		Wages per day.	Hours of labor daily.
	Men.	Women.				Men.	Women.				Men.	Women.		
Heading turner.....	1		*3	10										
Heading jointer.....	4		\$ 75	10		1		\$ 50	10					
Hoister	8		1 10	10										
Hod blast men.....	2		1 15	10										
Hod blast cleaner.....	1		1 00	10										
Heaters	7		4 50	10		8		*4						
Hod carriers.....	2		1 10	10		4		1 25	10					
Helpers	11		2 00	10		76		1 60	9½	14		\$1 50	11½	
Helpers	16		1 50	10		29		1 35	10	13		1 15	12	
Helpers	2		1 37	12		11		1 25	10	99		1 00	10	
Helpers	2		1 30	12		2		1 20	12	9		1 75	10	
Helpers	23		1 10	10										
Iron carriers.....	3		1 40	10										
Iron breakers.....	4		1 00	10										
Iron handlers.....	8		1 50	12										
Keepers.....	2		2 20	12		2		2 25	12	2		1 40	12	
Keepers.....	2		1 65	12										
Lime breakers.....	2		1 00	12										
Lime founders.....	2		1 12	12										
Laborers.....	6		1 43	10		21		1 10	10	149		1 15	10	
Laborers.....	5		1 50	10		56		1 00	10	10		1 20	10	
Laborers.....	12		40	10										
Millwright	1		2 50	10										
Mounters	6		1 90	10		5		2 00	10					
Machinists.....	7		2 50	10		1		3 50	10					
Moulders	31		2 50	10		16		2 63	10	2		1 50	10	
Moulders	3		1 65	10		4		2 00	10					
Nailer.....	32		*5	10										
Office clerks.....	6		4 00	10		5		2 35	10	6		70	10	
Off-bearers.....	4		65	8		7		70	8					
Ore brushers.....	2		1 50	9										
Ore wheelers.....	1		1 10	9										
Puddlers	38		2 75	9½		48		*6	9					
Planer	1		50	10										
Packers	3		4 50	10										
Pressmen	2		1 25	10		2		1 85	8					
Painters	2		2 00	10		1		2 50	10	1		1 75	10	
Painters	1		1 00	10										
Pattern makers.....	1		2 50	10		2		2 00	10					
Pan men.....	2		1 35	10										
Pilers.....	2		1 00	12										
Pig-iron breakers.....	2		2 00	10										
Roll hands.....	12		3 00	10										
Reporter	1		1 66	9										
Roughers	2		2 76	9										
Rollers	2		*7	9		3		7 00	11	2		6 00	11	
Rollers	2		4 00	9		2		*8						
Stockmen	3		1 00	12										
Stave cutters.....	1		80	10		1		1 87	10					
Stave carriers.....	3		50	10		1		*9						
Setting up hands.....	5		*10	10										
Sawyer	1		1 65	10										
Shove unders.....	4		2 25	10										
Scrapers	2		90	10										
Snappers	2		1 12	12										
Screeners	2		1 15	12										
Stock handlers.....	10		1 00	12										
Superintendent	1		5 00	10										
Salesman	1		3 50	10										
Setters	1		1 15	10		1		1 45	10					
Strikers	1		1 00	10		1		1 20	10	2		1 50	10	
Shearmen.....	1		*11	10		4		1 45	10					
Tenders.....	9		2 00	10										
Top tillers.....	4		1 20	10		6		1 35	10					

*3 \$20 per 100 sets. *4 63 cents per ton. *5 17 cents card rate. *6 \$5 per ton. *7 62 cents per ton.

*8 65 cents per ton. *9 18 cents per keg. *10 1¼ cents per keg. *11 36 cents per ton.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Ironton—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Trimmers.....	1	.....	\$2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Wheelers	2	.....	1 35	10	.....	.....	.....	.....	.....	.....	.....	.....
Woodworker	1	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Weighers	2	.....	1 12	10	4	.....	\$1 85	10	4	.....	\$1 00	10
Watchmen.....	1	.....	1 45	10	1	.....	1 00	10	1	.....	50	10
Watchmen.....	1	.....	1 65	10	1	.....	1 55	10	2	.....	1 50	10

Total number of men employed, 1,496. Total number of women employed, 5.

The statistics of Lawrence county, outside of Ironton, were secured by a personal visit by the Commissioner. Mr. George B. Davis, an iron worker of Ironton, secured the returns from that city. The outside labor was not taken, but the wages are small as compared with some cities, but about those prevailing in most of the river towns. This is due largely to the competition from the territory south of the river. Women are not found in the workshops here, but of the 1,500 employes in the industrial establishments of the city, at least 300 are boys from 12 to 18 years old, working at from 50 cents to \$1.00 a day—averaging about 70 cents. A large number of persons are employed at Hanging Rock, Hecla, and other furnace towns of the county, at wages ranging from 90 cents a day to \$1.00—90 cents being the prevailing price for furnace hands, working twelve hours a day. These furnace owners furnish houses to most of such employes free of cost. Each furnace has a store in connection with the works, at which the employes are expected to purchase the necessities of life. They have no regular pay-days, but the men run accounts at the stores, and draw out money whenever their necessities demand it, and there is anything due. A large number of men are employed at these furnaces hauling coke, ore and limestone with ox-teams. These usually work on contracts at so much a ton, taking out most of their wages at the stores. The men complain of the stores most bitterly, and, as might be expected, the most friendly relations do not exist between the employer and employe, though strikes seldom occur. The work is quite steady most of the time, though there were stoppages during the summer and fall in consequence of the drouth.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Newark, Licking County.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Apprentices	2	.....	\$ 60	10	51	.....	\$ 80	10	7	.....	\$ 75	10
Axle cutters	2	.....	1 20	10	2	.....	1 40	10	.....	.....	.....	.....
Boiler makers.....	3	.....	2 50	10	4	.....	1 87	10	19	.....	2 25	10
Boiler makers.....	2	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Bolt heaters.....	2	.....	1 85	10	2	.....	1 50	10	.....	.....	.....	.....
Bolt cutters	6	.....	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Boiler washers.....	5	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Bookbinders.....	4	.....	1 00	10	.....	1	80	10	.....	.....	.....	.....
Bleachers	3	.....	1 35	10	.....	.....	.....	.....	.....	.....	.....	.....
Book-keepers	2	.....	2 17	10	1	.....	2 00	10	3	.....	2 50	10

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Newark—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Sand repairers.....	4	.....	\$1 20	10	.....	.....	.....	.....	.....	.....	.....	.....
Salesmen	2	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Solicitors	2	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Stone masons.....	18	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Stair builder.....	1	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Scale makers	2	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Strippers.....	3	.....	50	10	1	.....	\$ 42	10	.....	2	\$ 30	10
Saw men.....	9	.....	1 65	10	.....	.....	.....	.....	.....	.....	.....	.....
Straw handlers.....	3	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Straw finishers.....	.....	6	50	10	.....	.....	.....	.....	.....	.....	.....	.....
Teamster	1	.....	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Tailors.....	12	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Tinners	7	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Trimmers.....	1	.....	1 75	10	2	.....	2 00	10	.....	.....	.....	.....
Upholsterers.....	1	.....	2 55	10	.....	.....	.....	.....	.....	.....	.....	.....
Woodworkers.....	3	.....	2 50	10	4	.....	2 00	10	3	.....	1 65	10
Woodworkers.....	2	.....	1 85	10	.....	.....	.....	.....	.....	.....	.....	.....
Wheel fitters.....	2	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Wheelwrights	3	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Wheel pressmen	2	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Wood turner	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Watchmen.....	2	.....	1 35	10	.....	.....	.....	.....	.....	.....	.....	.....
Yard cleaners	30	.....	1 10	10	.....	.....	.....	.....	.....	.....	.....	.....
Yard engine man.....	1	.....	1 75	.....	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 1,450. Total number of women employed, 102.

Bellefontaine, Logan County.

Apprentices	2	.....	50	10	.....	.....	.....	.....	.....	.....	.....	.....
Boxer	1	.....	1 33	10	.....	.....	.....	.....	.....	.....	.....	.....
Bricklayers	6	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Book-keepers.....	3	.....	2 00	10	.....	1	\$1 00	10	.....	.....	.....	.....
Body makers.....	10	.....	2 00	10	12	.....	1 50	10	11	.....	2 25	10
Blacksmiths	14	.....	2 00	10	1	.....	1 50	10	3	.....	2 25	10
Blacksmiths	2	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Chair makers.....	20	.....	1 25	10	10	.....	1 00	10	5	.....	50	10
Carpenters.....	7	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Clerks in stores.....	35	.....	1 25	10	.....	15	55	10	.....	.....	.....	.....
Dressmakers.....	.....	10	75	10	.....	.....	.....	.....	.....	.....	.....	.....
Engineers	1	.....	1 67	10	1	.....	1 50	10	1	.....	1 66	10
Engineers	2	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Foremen.....	3	.....	2 00	10	1	.....	4 00	12	.....	.....	.....	.....
Hod carriers.....	8	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Helpers.....	1	.....	34	12	5	.....	84	10	6	.....	1 16	10
Helpers.....	3	.....	1 80	10	.....	.....	.....	.....	.....	.....	.....	.....
Laborers.....	31	.....	1 25	10	6	.....	1 40	10	1	.....	1 66	10
Moulders	5	.....	50	10	.....	.....	.....	.....	.....	.....	.....	.....
Machinists	4	.....	2 00	10	3	.....	2 00	10	2	.....	2 50	10
Machinemen	11	.....	2 00	10	2	.....	1 50	10	1	.....	1 75	10
Machinemen	2	.....	1 70	10	.....	.....	.....	.....	.....	.....	.....	.....
Managers	2	.....	1 75	10	2	.....	2 50	10	.....	.....	.....	.....
Printers	4	.....	1 50	10	5	.....	50	10	3	.....	1 33	10
Painters	3	.....	2 50	10	4	.....	1 50	10	4	.....	2 00	10
Plasterers	8	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Street laborers.....	3	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Stone masons.....	6	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Tailors	8	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Turner.....	1	.....	1 67	10	.....	.....	.....	.....	.....	.....	.....	.....
Trimmers.....	2	.....	1 50	10	1	.....	2 00	10	.....	.....	.....	.....
Teamsters.....	10	.....	1 25	10	2	.....	1 00	10	.....	.....	.....	.....
Woodworkers.....	1	.....	2 00	10	1	.....	1 50	10	.....	.....	.....	.....

Total number of men employed, 312. Total number of women employed, 26.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Toledo, Lucas County.

Occupation.	No. employed.		Wages per day.	Hours of labor daily.	No. employed.		Wages per day.	Hours of labor daily.	No. employed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Apprentices	99	22	\$ 50	10	189	15	\$ 66	10	189	8	\$ 83	10
Apprentices	109	1	1 00	10	69	38	33	10	.....	.....	.....	.....
Adjusters	34	.....	2 50	10	1	.....	2 75	10	.....	.....	.....	.....
Blacksmiths	29	.....	2 75	10	31	.....	2 25	10	43	.....	2 00	10
Blacksmiths	75	.....	1 75	10	29	.....	1 50	10	26	.....	2 50	10
Bakers	49	.....	1 75	10	49	.....	1 50	10	46	.....	1 25	10
Box makers	6	.....	2 00	10	4	.....	2 50	10	.....	7	1 00	10
Box makers	1	.....	1 60	10	1	.....	1 35	10	.....	.....	.....	.....
Box nailers	2	.....	40	10	.....	.....	.....	.....	.....	.....	.....	.....
Bottler	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Book-keeper	1	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Binders	1	.....	2 00	10	28	.....	2 33	10	6	.....	2 50	10
Boiler makers	2	.....	2 12	10	.....	.....	.....	.....	.....	.....	.....	.....
Basket makers	34	2	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Brewers	2	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Bolt maker	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Carpenters	125	.....	2 25	10	114	.....	1 75	10	27	.....	2 50	10
Carpenters	20	.....	1 85	10	141	.....	2 00	10	83	.....	2 30	10
Carpenters	20	.....	2 30	9	.....	.....	.....	.....	.....	.....	.....	.....
Coopers	35	.....	1 60	10	5	.....	*1 11	10	6	.....	1 75	10
Coopers	24	.....	2 00	10	1	.....	1 50	10	.....	.....	.....	.....
Cabinet makers	29	.....	1 75	10	22	.....	2 00	10	28	.....	2 50	10
Cornice makers	22	.....	2 50	10	22	.....	2 00	10	2	.....	2 25	10
Compounder and mixer	1	.....	3 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Cutters	1	.....	3 00	10	29	.....	1 00	10	.....	9	75	10
Cutters	1	.....	4 00	10	1	.....	2 00	10	20	.....	1 50	10
Cellar men	37	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Cigar-makers	138	.....	*2	10	102	.....	*3	10	20	1	*4	10
Carvers	1	.....	1 75	10	1	.....	2 00	10	.....	.....	.....	.....
Compositors	213	.....	*5 30	10	25	.....	*5 33	10	.....	.....	.....	.....
Drivers	1	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Drawers	21	8	50	10	.....	.....	.....	.....	.....	.....	.....	.....
Drippers	3	.....	1 65	10	.....	.....	.....	.....	.....	.....	.....	.....
Dynamos men	2	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Engineers	1	.....	1 85	10	7	.....	2 50	10	1	.....	1 25	10
Engineers	1	.....	1 20	10	1	.....	2 40	10	20	.....	1 50	10
Engineers	1	.....	2 05	10	1	.....	2 60	10	23	.....	1 75	10
Engineers	7	.....	2 25	10	1	.....	2 75	10	21	.....	2 00	10
Electrician	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Edgers	2	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Editors and reporters	5	.....	3 33	10	1	1	2 00	10	11	1	1 66	10
Editors and reporters	5	.....	4 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Engravers	2	.....	1 75	10	1	.....	2 50	10	.....	.....	.....	.....
Forger	1	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Frame makers	24	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Feeders	1	.....	1 66	10	5	.....	1 33	10	.....	.....	.....	.....
Finishers	1	.....	1 30	10	.....	35	75	10	24	.....	2 00	10
Finishers .....	.....	89	60	10	59	.....	1 75	10	5	35	1 00	10
Gilders	22	.....	1 50	10	.....	43	1 00	10	.....	.....	.....	.....
Galvanizers	2	.....	1 30	10	.....	.....	.....	.....	.....	.....	.....	.....
Grinders	1	.....	2 00	10	1	.....	1 75	10	20	.....	1 25	10
Grinders	1	.....	3 25	10	1	.....	1 50	10	.....	.....	.....	.....
Helpers	85	25	1 00	10	1	30	50	10	34	.....	1 40	10
Helpers	48	5	1 25	10	32	.....	1 50	10	1	.....	1 35	10
Helpers	5	25	60	10	1	.....	1 30	10	1	62	85	10
Helpers	3	.....	80	10	1	35	75	10	59	73	40	10
Helpers	13	65	45	10	.....	.....	.....	.....	.....	.....	.....	.....
Heaters	12	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Headers	12	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Ironers	1	.....	1 25	10	.....	100	85	10	.....	.....	.....	.....
Japanner	1	.....	4 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Laborers	125	13	1 00	10	1	.....	1 65	10	30	.....	1 30	10
Laborers	9	.....	85	10	9	35	50	10	20	.....	75	10
Laborers	3	32	1 10	10	4	3	40	10	7	.....	2 00	10
Laborers	190	.....	1 60	10	29	.....	1 40	10	389	.....	1 25	10
Laborers .....	.....	22	60	10	48	.....	1 75	10	200	.....	1 50	10

*1 Per barrel. *2 \$6 to \$12 per 1,000. *3 \$7 to \$13 per 1,000. *4 \$6 to \$10 per 1,000. *5 Per 1,000 ems.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Toledo—Continued.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Laborers.....	300		\$1 35	10	74		\$1 15	10				
Lime men.....	2		1 80	10								
Machine hands.....	10		2 50	10	14	26	1 00	10	19		\$2 75	10
Machine hands.....	45		1 25	10		154	75	10	25		1 60	10
Machine hands.....	97		1 50	10	2		2 00	10	1		1 37	10
Machine hands.....	179		1 75	10	3		1 85	10	3		3 00	10
Machine hands.....	2		1 62	10	69	30	80	10	3		2 30	10
Machinists.....	2		2 30	10	2		2 75	10	112		2 50	10
Machinists.....	4		3 00	10	3		1 75	10	18		2 25	10
Machinists.....	68		2 00	10								
Moulders.....	6		1 75	10	28		2 25	10	78		2 00	10
Moulders.....	1		3 00	10	1		2 75	10	12		1 50	10
Millers.....	13		2 00	10								
Mounters.....	19		1 20	10								
Millwrights.....	9		3 50	10								
Mailing clerks.....	4	1	2 00	10								
Nutters.....		5	50	10								
Office hands.....	4	5	2 00	10	1		1 66	10	20	10	1 00	10
Office hands.....	9		3 00	10	1		60	10	5		3 33	10
Office hands.....	1		4 00	10								
Painters.....	29		75	10	3		1 75	10	2		1 80	10
Painters.....	113		2 00	10	1		2 50	10	9		1 50	10
Painters.....	1		1 25	10								
Plumbers.....	99		2 50	10								
Pattern makers.....	2		3 00	10	1		2 75	10	2		2 50	10
Pattern makers.....	6		2 25	10								
Packers.....		1	85	10	10	2	1 25	10	2	1	1 75	10
Packers.....	73	26	65	10	4		1 15	10	6	8	1 30	10
Packers.....	16		1 50	10	3		2 00	10	29	46	75	10
Pressmen.....	2		1 75	10	1		1 50	10	1		2 00	10
Pressmen.....		4	1 25	10	1		2 50	10	1		2 33	10
Pressmen.....	1		3 00	10	9		2 68	10				
Plow fitters.....	1		1 50	10	3		2 40	10				
Polishers.....	1		1 75	10	2		2 00	10	1		1 50	10
Polishers.....	26		1 30	10								
Pail hooper.....	1		3 00	10								
Pail bailers.....	2		1 50	10								
Pail makers.....	20		1 50	10								
Pump makers.....	1		3 00	10								
Paint makers.....	2		3 50	10								
Paperers.....		2	75	10								
Parasol maker.....	1		2 25	10								
Plater.....	1		3 00	10								
Rag makers.....	20		2 25	10								
Riveters.....	6		2 00	10								
Shipping clerk.....	1		2 55	10								
Sewing girls.....		8	65	10								
Stitchers.....		5	50	10		90	75	10				
Stone cutters.....	20		2 00	10	5		3 00	10	3		3 25	10
Sawyers.....	1		2 00	10	1		4 00	10				
Saw makers.....	1		2 50	10	1		3 00	10				
Strippers.....	40	22	65	10	9		1 50	10		6	80	10
Strippers.....		28	70	10	10		45	10	4	6	40	10
Strippers.....		23	50	10								
Sail makers.....	2		1 50	10		1	1 00	10				
Soap makers.....	2		3 25	10								
Silver platers.....	2		2 50	10								
Starchers.....		5	85	10		2	1 00	10				
Setters.....	4		2 50	10								
Screw makers.....	8		2 00	10								
Traveling men.....	1		2 50	10	1		4 00	10	1		2 75	10
Tinners.....	38		2 50	10	65		2 00	10	27		1 50	10
Tinners.....	46		1 75	10	1		3 50	10	16		3 00	10
Tinners.....	40		2 25	10								
Trimmers.....	29		2 25	10								
Trunk makers.....	19		1 50	10		5	75	10	12		2 00	10
Tailors.....	209		2 50	10		100	1 00	10	96		1 40	10
Trunk men.....	23		1 60	10								

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Youngstown—Continued.

Occupation.	No. employed.		Wages per day.	Hours of labor daily.		No. employed.		Wages per day.	Hours of labor daily.		No. employed.		Wages per day.	Hours of labor daily.
	Men.	Women.				Men.	Women.				Men.	Women.		
Chippers.....	1		\$1 85	10										
Cinder wheelers.....	23		1 53	10		23		\$1 65	10		2		\$1 40	10
Clerks.....	1		1 66	10		1		1 00	10		16		3 00	10
Clerks.....	2		2 30	10		5		2 50	10		2		2 00	10
Clerks.....		1	1 50	10		3		2 25	10		7		2 25	10
Clerks in stores.....	146		1 40	10			126	1 00	10					
Compositors.....	25		2 75 ^{*1}	9		1		2 50 ^{*2}	10		4		2 00	10
Compositors.....	5		^{*3}	10										
Coopers.....	13		2 25	10										
Core makers.....	2		1 75	10										
Cupola men.....	2		1 65	10		1		1 75	10		1		2 50	10
Dragouts.....	7		1 90	10		18		1 40	10		26		1 30	10
Dragouts.....	4		1 25	10										
Draughtsmen.....	2		4 00	10		1		5 00	10					
Dressmakers.....		39	1 00	10										
Editors.....	3		3 00	14		3		2 50	14					
Engineers.....	3		1 75	10		11		2 50	12		4		1 89	10
Engineers.....	1		1 90	12		2		1 50	12		12		2 00	10
Engineers.....	1		1 00	12		11		2 25	12		2		1 30	10
Engineers.....	4		2 35	10		13		1 65	10		25		2 20	10
Feeders.....	3		1 14	10										
Finishing mill rollers.....	1		14 00	10		1		13 00	10		1		12 00	10
Finishing mill rollers.....	1		8 00	10		1		9 00	10		1		16 40	10
Finishing mill rollers.....	1		33 82	10		1		12 65	10		1		12 80	10
Finishing mill rollers.....	1		7 00	10		11		16 00	10		10		^{*4}	10
Finishing mill rollers.....	2		11 00	10										
Finishers.....	9		2 25	10										
Firemen.....	10		1 55	10		6		1 65	10		6		1 57	10
Firemen.....	4		1 50	10		26		1 60	10		2		1 70	10
Fix wheelers.....	5		2 25	10										
Folder.....		1	50	10										
Foremen.....	1		2 65	10		3		3 85	10		1		3 60	10
Foremen.....	2		3 25	10		1		3 50	10		6		3 00	10
Foremen.....	8		2 50	10		1		2 00	10		1		4 50	10
Foremen.....	1		2 25	10		2		4 00	10		1		3 12 ¹ / ₂	10
Foremen.....	2		2 10	10		1		3 16 ² / ₃	10					
Furnace manager.....	1		7 00	10										
Gas-furnace tenders.....	4		1 80	10		4		1 66	10		1		1 30	10
Gate keepers.....	1		1 30	10										
Grinders.....	3		1 75	10										
Heaters.....	8		8 00	10		44		6 00	10		22		6 50	10
Heaters.....	10		5 50	10		2		3 00	10					
Heaters' helpers.....	84		2 00	10		14		2 25	10					
Helpers.....	5		1 25	10		15		75	10		210		1 40	10
Helpers.....	3		1 35	10		5		1 32	10		85		1 50	10
Helpers.....	42		1 65	10		40		2 25	10		36		2 00	10
Hod carriers.....	20		1 75	9										
Hook-ups.....	2		1 05	10		16		1 90	10		12		1 40	10
Hook-ups.....	4		1 25	10										
Hot blast men.....	12		1 65	10										
Iron testers.....	4		1 75	10										
Keeper.....	18		1 90	10										
Laborers.....	95		1 50	10		60		1 35	10		7		1 55	10
Laborers.....	111		1 30	10		484		1 25	10		21		1 15	10
Laborers.....	17		1 26	10		46		1 65	10		176		1 40	10
Laborers.....	18		1 91	10		10		1 36	10		46		1 45	10
Laborers.....	25		1 20	10										
Labor bosses.....	8		2 25	10										
Limestone breakers.....	4		1 55	10		47		2 31	10		7		2 50	10
Machinists.....	11		2 24	10		31		2 23	10		1		2 60	10
Machinists.....	8		2 10	10		4		2 25	10					
Machine hands.....	6		2 00	10		1		2 75	10		3		1 70	10
Metal breakers.....	3		2 00	10		2		2 15	10					
Millers.....	10		2 50	10										
Millwrights.....	1		2 20	10		1		1 50	10		4		3 00	10
Millwrights.....	9		1 80	10		2		1 40	10		1		2 00	10

^{*1} 33¹/₃ and 37¹/₂ cents per thousand. ^{*2} 33¹/₂ cents per thousand. ^{*3} 33¹/₈ cents per thousand.^{*4} Refused to give price.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Youngstown—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Moulders	8		\$2 37	10	16		\$2 75	10	12		\$2 42	10
Moulders	2		2 50	10	16		2 25	10	21		1 95	10
Moulders	1		4 00	10	16		2 35	10				
Muck-mill rollers	1		5 00	10	4		3 50	10	6		7 00	10
Muck-mill rollers	4		3 00	10								
Nailers	11		10 00	10								
Nail feeders	50		1 50	10								
Nail hauler	1		2 25	10								
Night rollers	25		4 00	10								
Nut and bolt makers	13		1 25	10	6		1 54	10	15		1 40	10
Nut and bolt makers		3	60	10	2		4 00	10	2		2 00	10
Nut and bolt makers	3		75	10								
Packers	2		2 00	10	1		1 15	10	6		1 65	10
Painters	40		2 50	10	20		1 67	10	19		1 75	10
Pair heaters	5		2 00	10								
Pattern fitters	2		2 25	10								
Pattern makers	6		2 70	10	2		2 37	10	5		2 30	10
Pattern makers	1		3 50	10								
Pilers	22		1 40	10	20		1 35	10				
Pipe fitters	1		2 00	10								
Plasterers	40		2 50	10								
Plumbers	23		2 50	10								
Pointers	2		80	10								
Pressmen	1		3 00	10								
Puddle bosses	8		4 00	10								
Puddlers	502		4 00	10								
Puddlers' helpers	502		2 00	10								
Reporters	2		2 50	10	1		1 65	10				
Roll turners	4		3 50	10	7		3 00	10				
Roughers	2		2 90	10	16		4 00	10	82		3 50	10
Roughers	4		2 75	10	12		3 00	10				
Scale makers	7		2 50	10								
Scrapers	6		1 30	10								
Setters	3		2 00	10								
Sheet-mill hands	17		1 57	10	24		1 75	10	1		2 50	10
Stone masons	60		3 50	9								
Store keeper	1		1 90	10								
Stockmen	6		2 00	10	63		1 50	10	66		1 30	10
Stove mounters	3		2 75	10								
Spike cutters	1		1 50	10								
Stranders	40		1 20	10	4		1 25	10	36		1 40	10
Strippers	10	1	75	10								
Street laborers	12		1 50	10								
Tailors	80	45	3 50	10								
Teamsters	7		1 50	10	4		1 65	10	2		1 67½	10
Teamsters	5		1 55	10	2		1 75	10	4		1 45	10
Teamsters	5		1 25	10								
Top fillers	6		1 85	10	6		1 80	10				
Trackmen	6		1 30	10	10		1 80	10	2		2 40	10
Trackmen	10		1 75	10	4		1 40	10				
Trimmers	5		1 75	10								
Warehouse men	38		1 50	10	21		1 45	10				
Watchmen	10		1 30	10	1		1 25	10	2		1 50	10
Watchmen	1		1 60	10	1		2 35	10				
Water tenders	2		1 30	10	4		1 40	10				
Weighmen	12		1 32	10	2		1 50	10				
Wheelers	5		1 70	10								
Woodworkers	16		1 75	10	15		1 66	10				

Total number of men employed, 5,849. Total number of women employed, 216.

Marion, Marion County.

Apprentices	6		1 00	10	3		75	10				
Book-keepers	1		1 75	10	1		1 18	10	1		2 00	10
Bricklayers	10		3 00	10								
Boiler makers	20		2 50	10								
Blacksmiths	18		2 25	10	9		2 00	10	6		2 75	10

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Marion—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Collector.....	1		\$1 75	10								
Cabinet makers.....	5		1 50	10								
Carpenters.....	2		1 75	10	45		\$2 00	10				
Clerks.....	3	2	2 00	10								
Clerks in stores	90		1 25	10		10	85	10				
Driver	1		1 25	10								
Dressmakers.....		25	75	10								
Encitingmen	8		1 75	10								
Engineers.....	1		1 25	10	2		1 50	10	1		\$1 60	10
Engineers.....	8		2 00	10								
Foundrymen	9		2 25	10								
Finishers	1		50	10	1		1 66	10				
Filer	1		2 00	10								
Firemen	1		1 66	10	1		1 50	10				
Hod carriers.....	20		1 50	10								
Harness makers	2		1 50	10								
Helpers.....	9		1 50	10	3		1 25	10	3		50	10
Helpers.....		3	50	10								
Ironers		3	50	10								
Job workers	3		1 50	10								
Joiner	1		1 25	10								
Laborers.....	22		1 25	10	24		1 50	10				
Millers.....	3		2 25	10								
Matchers	2		1 50	10								
Moulders	1		2 50	10	21		2 00	10				
Machine men.....	1		1 50	10	5		2 00	10				
Machinists.....	15		2 15	10	9		2 00	10	47		2 25	10
Machinists.....	1		1 80	10	1		1 25	10	1		75	10
Office men.....	2		2 25	10								
Plasterers.....	9		2 00	10								
Planer	1		1 25	10								
Packer.....	1		1 25	10								
Pattern makers.....	1		3 00	10	1		2 00	10				
Painters.....	1		1 50	10	5		2 00	10	20		2 25	10
Printers.....	3		1 50	10	6		1 63	10	4		1 75	10
Pressmen	1		1 25	10								
Reporter	1		1 75	10								
Slaters	3		2 00	10								
Street laborers	5		1 50	10								
Stone masons.....	20		2 25	10								
Salesmen	5		2 50	10								
Sectionmen.....	35		1 15	10								
Sawyers.....	1		2 50	10	1		1 75	10				
Solicitor	1		1 75	10								
Trimmers	1		2 00	10	2		2 25	10				
Tailors.....	27		2 50	10		14	1 00	10				
Tinners.....	11		2 00	10								
Upholsterers.....	2		2 00	10								
Wheelers.....	2		1 25	10								
Washers	2		1 50	10								
Woodworkers.....	5		2 10	10	48		1 75	10	5		2 25	10
Woodworkers.....	3		2 50	10	2		1 70	10				
Watchmen.....	1		1 35	10	1		1 25	10				

Total number of men employed, 689. Total number of women employed, 57.

Prospect.

Blacksmiths	2		2 25	10								
Clerks in stores.....	12		1 25	10								
Carpenters.....	4		2 25	10								
Dressmakers.....		4	65	10								
Helpers.....	2		2 25	10								
Laborers.....	18		1 20	10								
Painters	4		2 25	10								
Tailors.....	2		2 25	10								
Trimmers	2		2 50	10								

Total number of men employed, 41. Total number of women employed, 4.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Celina, Mercer County.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Apprentices	1	.....	\$ 65	10	.....	1	\$ 35	10	.....	.....	.....	.....
Blacksmiths	3	.....	1 50	10	2	.....	2 00	10	7	.....	\$1 75	10
Bricklayers	3	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Clerks in stores.....	77	.....	1 00	10	.....	15	50	10	.....	.....	.....	.....
Carpenters.....	20	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Compositors	1	.....	1 00	10	1	.....	1 75	10	.....	.....	.....	.....
Driver	1	.....	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Dressmakers.....	.....	6	4 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Editor	1	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Engineers.....	2	.....	1 50	10	1	.....	1 00	10	1	.....	1 66	10
Foremen.....	1	.....	2 50	10	1	.....	2 00	10	1	.....	1 75	10
Firemen	1	.....	1 50	10	2	.....	1 40	10	.....	.....	.....	.....
Heading pinners	5	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Heading jointers	4	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Heading circular	1	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Hod carriers.....	3	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Helpers	2	.....	2 25	10	1	.....	75	10	.....	.....	.....	.....
Log loader	1	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Laborers.....	9	.....	1 00	10	10	.....	1 50	10	5	.....	80	10
Laborers.....	68	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Millers.....	1	.....	2 00	10	1	.....	1 50	10	.....	.....	.....	.....
Off-bearer	1	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Painters	4	.....	1 75	10	2	.....	2 25	10	6	.....	2 00	10
Plumber	1	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Plasterers.....	3	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Setter.....	1	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Sawyers.....	2	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Spinners.....	1	.....	2 00	10	.....	25	1 25	10	.....	.....	.....	.....
Stone masons.....	7	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Trimmers.....	1	.....	2 25	10	1	.....	2 00	10	.....	.....	.....	.....
Tailors	3	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Woodworkers.....	2	.....	2 00	10	2	.....	2 50	10	2	.....	1 50	10
Weavers	1	.....	2 00	10	.....	25	1 25	10	.....	.....	.....	.....

Total number of men employed, 278. Total number of women employed, 72.

Middleport, Meigs County.

Apprentices	2	.....	50	10	3	.....	60	10	.....	.....	.....	.....
Blacksmiths	8	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Bricklayers	4	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Carpenters.....	14	.....	1 75	10	3	.....	2 00	10	.....	.....	.....	.....
Compositors	4	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Clerks in stores.....	22	.....	1 15	10	.....	10	60	10	.....	.....	.....	.....
Cabinet makers.....	8	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Dressmakers.....	.....	9	75	10	.....	.....	.....	.....	.....	.....	.....	.....
Engineers.....	2	.....	1 50	10	2	.....	1 25	10	.....	.....	.....	.....
Editor	1	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Foremen.....	2	.....	2 00	10	2	.....	1 75	10	.....	.....	.....	.....
Finishers	5	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Hod carriers.....	6	.....	1 40	10	.....	.....	.....	.....	.....	.....	.....	.....
Laborers.....	17	.....	1 20	10	8	.....	1 15	10	6	.....	1 10	10
Laborers.....	10	.....	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Machine hands.....	4	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Millers.....	2	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Moulders	4	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Office clerks'	5	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Plasterers.....	6	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Painters	9	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Stone masons.....	6	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Tailors.....	5	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 170. Total number of women employed, 19.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Pomeroy.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Apprentices	8		\$ 35	10	4		\$ 50	10	9		\$ 60	10
Apprentices	10		75	10								
Brine tender.....	1		1 25	10								
Burner	1		2 25	10								
Book-keeper.....		1	85	10								
Blacksmiths	12		2 00	10	2		2 25	10				
Bricklayers	10		2 25	10								
Clerks in stores.....	95		1 25	10		40	75	10				
Carpenters.....	8		1 50	10								
Coopers.....	58		1 25	10	14		1 50	10	11		1 10	10
Comp sitors	7		1 50	10								
Cupola tender	1		1 50	10								
Cellarman	1		2 00	10								
Cabinet makers.....	11		1 75	10								
Dressmakers		20	75	10								
Editors	1		2 25	10	2		2 50	10				
Engineers.....	2		2 00	10	8		1 25	10	4		1 50	10
Firemen	4		2 00	10	8		1 25	10				
Foremen.....	2		1 50	10	4		2 00	10	4		1 75	10
Finishers	5		1 25	10								
Hod carriers.....	20		1 25	10								
Laborers.....	13		1 00	10	20		2 25	10	81		1 00	10
Laborers.....	13		1 25	10								
Machine hands	19		1 50	10								
Managers	1		1 34	10	1		2 00	10	1		2 50	10
Managers	1		3 35	10								
Millers.....	2		2 25	10	1		1 75	10				
Moulders	2		2 00	10								
Machinists	4		2 25	10								
Office clerks.....	19		1 50	10								
Pattern maker.....	1		2 00	10								
Packers	7		1 25	10								
Plasterers	15		2 00	10								
Painters.....	17		1 75	10								
Stone masons	11		2 25	10								
Salt boss.....	1		2 00	10								
Salt lifters	8		1 10	10								
Salt miners	22		1 25	10	45		1 40	10	19		1 35	10
Teamsters.....	2		1 00	10	1		1 34	10	3		1 50	10
Teamsters	3		1 75	10								
Tailors	14		2 50	10		6	1 00	10				
Well tender.....	1		1 40	10								

Total number of men employed, 675. Total number of women employed, 67.

Bradford Junction, Miami County.

Blacksmiths	2		2 00	10								
Coal shovele s	9		1 25	10								
Carpenters	2		2 00	10								
Clerks in stores.....	4		1 25	10								
Dressmakers.....		3	1 00	10								
Laborers.....	20		1 25	10								
Painters.....	4		1 75	10								
Round-house men.....	45		1 25	10								
Section men	6		1 25	10								
Yard men.....	10		1 50	10								

Total number of men employed, 102. Total number of women employed, 3.

Covington.

Bricklayers	2		3 50	10								
Butchers.....	4		1 35	10								
Bakers.....	2		1 66 ² / ₃	10								
Barbers	5		1 25	10								
Book-keeper.....	1		1 75	10								
Blacksmiths	10		2 00	10								

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Covington—Concluded.

Occupation.	No em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Benders.....	2		\$1 25	10								
Carder.....	1		85	10								
Clay hauler.....	1		1 25	10								
Carpet weavers.....	2		1 50	10								
Carpenters.....	29		1 50	10								
Clerks.....	13		1 15	10		7	\$ 75	10				
Dressmakers.....		15	78	10		9	75	10		6	\$1 00	10
Dropers.....	2		1 25	10								
Engineers.....	1		1 50	10	1		1 75	10				
Finishers.....	2		1 25	10								
Harness makers.....	3		1 00	10								
Helpers.....	5		1 00	10								
Laborers.....	86		1 60	10	11		1 25	10				
Machine hands.....	1		1 50	10	6		1 25	10				
Metal workers.....	3		1 62	10								
Moulders.....	2		1 50	10								
Millers.....	1		1 15	10	1		2 25	10				
Plasterers.....	8		2 25	10								
Photographers.....	2		2 50	10								
Pump makers.....	2		2 00	10								
Packers.....	2		1 50	10	1		1 15	10				
Painters.....	2		1 50	10	15		1 25	10				
Planers and rippers.....	2		1 50	10								
Pit filler.....	1		1 25	10								
Stone masons.....	10		3 00	10								
Shoemakers.....	8		1 40	10								
Stone cutters.....	19		2 75	10								
Superintendent.....	1		2 75	10								
Setters.....	1		1 50	10	1		1 25	10				
Sorters.....		3	75	10								
Spooler and ruler.....		1	75	10								
Scourer.....	1		1 25	10								
Spinner.....	1		1 75	10								
Street laborers.....	47		1 25	10								
Spoke turners.....	3		1 50	10								
Teamsters.....	3		2 00	10	1		1 00	10	2		1 25	10
Teamsters.....	12		2 75	10								
Trimmers.....	2		2 00	10								
Tinners.....	3		1 62	10								
Truckers.....	2		1 25	10								
Temperers.....	2		1 25	10								
Tailors.....		3	75	10	5		2 00	10				
Watch and clock repairers.....	2		1 50	10								
Wheelers.....	2		1 25	10								
Watchman.....	1		1 25	10								
Woodworkers.....	2		1 50	10								
Weavers.....		2	75	10								

Total number of men employed, 353. Total number of women employed, 46.

Piqua.

Apprentices.....	2		68	10								
Benders.....	40		1 50	10								
Bench men.....	12		1 50	10								
Brewers.....	1		2 50	10	1		2 00	10				
Book-keeper.....	1		1 50	10								
Coopers.....	1		1 40	10	1		1 75	10				
Compo-itors.....	2		1 50	10	7		2 00	10				
Cellar man.....	1		2 00	10								
Cabinet men.....	4		2 50	10	25		2 00	10				
Carpenters.....	1		2 50	10	17		2 00	10	12		1 66	10
Carpenters.....	1		1 50	10								
Dyers.....	15		2 69	10								
Engineers.....	1		2 25	10	7		1 50	10	1		1 75	10
Engineers.....	2		2 50	10								
Finishers.....	28		1 50	10	30		1 35	10				
Foremen.....	1		2 70	10	4		3 00	10	1		1 50	10

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Piqua—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Firemen	1	.....	\$1 17	10	4	.....	\$1 50	.....	.....	.....	.....	.....
Helpers	8	.....	60	10	1	.....	1 00	10	.....	.....	.....	.....
Joiners .....	.....	17	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Knitters .....	.....	20	1 15	10	.....	20	66	10	.....	20	\$ 40	10
Laborers.....	1	.....	75	10	153	.....	1 25	10	20	.....	1 33	10
Laborers.....	56	.....	1 15	10	12	.....	1 50	10	21	.....	1 40	10
Malsters	12	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Machinists.....	2	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Machine men	12	.....	1 75	10	15	.....	2 00	10	3	.....	1 25	10
Machine men.....	105	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Millers	2	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Off-bearer.....	1	.....	1 17	10	.....	.....	.....	.....	.....	.....	.....	.....
Paper men.....	25	.....	2 35	10	.....	.....	.....	.....	.....	.....	.....	.....
Pressmen	4	.....	1 75	10	2	.....	1 40	10	1	.....	1 25	10
Pressmen	7	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Packers	2	.....	1 35	10	1	.....	1 50	10	.....	.....	.....	.....
Rounders	20	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Sawyers.....	1	.....	1 17	10	1	.....	3 00	10	.....	.....	.....	.....
Spinners.....	18	.....	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Superintendent	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Secretary	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Street laborers.....	15	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Type setters.....	.....	2	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Teamsters	1	.....	1 17	10	10	.....	1 00	10	1	.....	2 00	10
Teamsters	1	.....	1 66	10	.....	.....	.....	.....	.....	.....	.....	.....
Women .....	.....	13	66	10	.....	.....	.....	.....	.....	.....	.....	.....
Weighmen.....	1	.....	1 85	10	.....	.....	.....	.....	.....	.....	.....	.....
Weavers .....	.....	19	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 756. Total number of women employed, 111.

McConnelsville, Morgan County.

Blacksmiths	5	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Bricklayers	2	.....	3 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Clerks in stores	10	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Carpenters.....	12	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Collector.....	1	.....	1 33	9	.....	.....	.....	.....	.....	.....	.....	.....
Compositors	3	.....	1 35	9	2	.....	1 13	9	.....	1	84	9
Cigarmakers.....	19	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Dressmakers.....	.....	14	60	10	.....	.....	.....	.....	.....	.....	.....	.....
Engineers.....	1	.....	1 75	10	1	.....	1 00	12	.....	.....	.....	.....
Editors	1	.....	3 34	9	2	.....	3 50	9	.....	.....	.....	.....
Hod carriers.....	5	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Laborers.....	3	.....	1 50	10	1	.....	84	9	1	.....	50	9
Laborers.....	1	.....	1 20	9	2	.....	1 00	12	25	.....	1 25	10
Machine men	3	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Managers	1	.....	2 00	10	1	.....	2 00	12	.....	.....	.....	.....
Millers.....	2	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Millwright.....	1	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Melter.....	1	.....	2 00	12	.....	.....	.....	.....	.....	.....	.....	.....
Plasterers.....	5	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Painters	6	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Sawyer.....	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Strippers.....	1	.....	50	10	1	.....	25	10	6	.....	75	10
Stone masons.....	4	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Tailors.....	4	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Watchman	1	.....	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 135. Total number of women employed, 15.

Malta.

Architect.....	1	.....	3 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Brick makers	2	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Beam hands.....	2	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Blacksmiths	7	.....	1 50	10	3	.....	2 00	10	.....	.....	.....	.....

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Malta—Concluded.

Occupation.	No. employed.		Wages per day.	Hours of labor daily.		No. employed.		Wages per day.	Hours of labor daily.		No. employed.		Wages per day.	Hours of labor daily.
	Men.	Women.				Men.	Women.				Men.	Women.		
Blacksmiths' helpers	3		\$1 10	10										
Bricklayers	2		3 00	10										
Cabinet makers.....	4		1 50	10										
Compositor	1		1 10	10										
Carpenters.....	4		2 00	10		3		\$1 75	10					
Curriers.....	4		1 34	10										
Clerks in stores	10		1 25	10										
Dressmakers.....		3	75	10										
Drillers	12		1 00	10										
Engineer	1		2 00	10										
Hammermen	3		1 15	10										
Hod carriers	2		1 40	10										
Laborers.....	26		1 00	10		10		1 15	10		6		\$1 50	10
Moulders	10		1 25	10										
Machinists.....	5		1 25	10										
Off-bearers.....	3		1 00	10										
Painters	4		1 75	10										
Plasterers.....	3		2 00	10										
Painters	12		1 25	10										
Stone masons.....	2		3 00	10										
Tailors.....	2		2 50	10										
Woodworkers.....	15		1 25	10										
Yardmen	5		1 10	10										

Total number of men employed, 167. Total number of women employed, 3.

Dayton, Montgomery County.

Assistant superintendent	1		2 00	10										
Assistant book-keepers.....	1		2 65	10		1		1 25	10		2		1 62	9½
Assorters	29		50	10										
Apprentices	2		60	10		3		75	10		25		40	10
Apprentices	1		1 00	10										
Bleachmen	4		1 50	10										
Book-keepers.....	8		3 00	10		1		3 50	10		3		2 00	10
Book-keepers.....	3		1 66	10		9		8 00	10		1		1 00	10
Book-keepers.....	1		3 20	10		1		2 50	10		2		3 25	10
Book-keepers.....	1		2 75	10		1		1 90	10		1		1 25	10
Back tenders.....	4		1 66½	10										
Bottlers.....	2		1 50	10										
Bottle washers.....	5		70	10										
Box makers	4		67	10		2		66	10		1		33	10
Box makers (cigars).....	3		1 00	10		3		1 50	10		3		1 75	10
Box makers (cigars).....	9		50	10			4	50	10			4	75	10
Box makers (cigars).....		4	90	10										
Bone burners	2		1 75	10										
Bender.....	1		1 65	10										
Brewmaster.....	1		5 00	10										
Button hole makers.....		1	34	9½			2	1 00	10			3	75	10
Beater men	2		1 50	12										
Bleachmen	4		1 50	9										
Boiler makers.....	8		2 50	10		119		1 67	10					
Bobbin girls		1	1 00	10										
Bookbinders.....	4		70	10		8		2 50	10			42	60	10
Bookbinders.....		2	85	10										
Blacksmiths.....	7		1 00	10		13		2 25	10		78		2 00	10
Blacksmiths.....	1		2 75	10		1		2 50	10		10		2 05	10
Blacksmith	3		1 70	10		4		1 80	10					
Bricklayers	90		3 50	10										
Bundlers	16		58½	10										
Brewers.....	11		2 25	10		5		2 00	10		1		2 25	10
Brewers.....	8		1 50	10										
Bakers.....	6		1 75	10										
Cigar makers.....	8		2 25	10			2	1 50	10		3		1 60	8
Cigar makers	4		2 20	10		5		1 25	10			125	1 00	10
Cigar makers	31		1 50	8½			60	75	8½		2		2 00	9
Cigar makers	4		1 20	8		6		*1	10		16		2 00	10

*1 \$6.00 per 1,000.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Dayton—Continued.

Occupation.	No. employed.		Wages per day.	Hours of labor daily.	No. employed.		Wages per week.	Hours of labor daily.	No. employed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Cigar makers	3		\$1 40	10		38	\$1 25	10		10	\$1 50	10
Cigar makers	25		1 50	8	12		83 $\frac{1}{2}$	8	2		1 75	10
Cigar makers		40	80	10	3		1 00	10		20	50	10
Clerks	2		3 75	10	6		4 00	10	1		2 00	10
Clerks	8		1 35	10	1		2 60	10	1		1 17	10
Clerks	2		50	10	1		2 50	10	1		33	10
Carpenters	8		1 85	10	12		2 40	10	277		2 10	10
Carpenters	37		2 00	10	2		2 90	10	125		2 25	10
Cornice makers	16		2 25	10	7		2 00	10				
Coopers	13		*1	10								
Carriers	20		2 75	10		3	1 50	10				
Converters	2		2 00	10								
Cupola tenders	2		1 75	10								
Cellar man	1		2 85	10								
Cutters	3		2 00	10	3		85	10				
Chair makers	40		1 66	10	18		2 00	10	50		1 50	10
Chair makers		183	75	10								
Cabinet makers	3		1 90	10	85		2 25	10	7		2 00	10
Core makers	3		1 15	10								
Counter boys	4		50	8								
Carpet cleaners	9		2 00	9 $\frac{1}{2}$								
Candy spinners	2		1 75	10								
Cream worker	1		2 00	10								
Carriage makers	110		2 50	10								
Compositors	37		2 00	10	30		2 50	10	20		2 97	10
Compositors	3		67	10	19		3 00	10	11		1 11	10
Compositors	5		*2	10	1		2 00	9	8		1 00	10
Compositors	400		1 60	10								
Drivers	7		1 50	9	4		2 25	10	3		3 00	10
Drivers	2		2 50	10	4		2 00	12	1		1 00	12
Distillery hands	5		1 50	10								
Drayman	1		1 25	10								
Draughtsmen	8		2 48	10	2		2 00	10	6		2 50	10
Engineers	3		2 75	12	5		2 00	12	3		3 00	10
Engineers	12		2 50	10	2		2 35	10	5		2 25	10
Engineers	12		1 66	10								
Feeders		29	41 $\frac{2}{3}$	10								
Finishers	1		1 75	10	5		2 00	10	3		1 66	10
Finishers	5		1 60	10	4		1 50	10				
Floorman	1		1 50	12								
Folder	1		84	9 $\frac{1}{2}$								
Foremen	1		4 50	10	2		5 00	10	4		1 50	10
Foreman	1		2 75	10	1		3 00	10	6		2 50	10
Foremen		1	1 00	10								
Fitters	2		1 75	10	2		1 50	10				
Firemen	3		1 70	10	4		2 00	10	2		2 10	10
Forger	1		3 75	10								
Fussmen	2		2 25	10								
Folders		1	75	10								
Foundrymen	23		2 11	10								
Galvanizer	1		2 50	10								
Girls		3	90	10								
General utility man	1		1 00	10								
Grinders	5		2 35	10								
Harness makers	8		1 75	10								
Helpers	65		50	10	4		1 37	10	2		58	10
Helpers	4		1 70	10	1		67	10	28	3	1 00	10
Helpers	3		*3	10	1		90	10	17	12	83	10
Helpers	3		75	10	5		65	10	11		50	10
Helpers	23		63	10	360		1 35	10	5		40	10
Helpers		10	55	10	3		1 67	10	31		1 50	10
Helpers	20		1 40	10	196		1 25	10	30		1 15	10
Hostler	1		1 40	10								
Hod carriers	63		2 25	10								
Ironers		18	1 00	9 $\frac{1}{2}$								
Inspecting girl		1	50	10								
Ice men	8		2 00	10								

*1 70 cents per barrel.

*2 25 cents per thousand ems.

*3 30 cents per ton.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Dayton—Continued.

Occupation.	No. employed.		Wages per day.	Hours of labor daily.		No. employed.		Wages per day.	Hours of labor daily.		No. employed.		Wages per day.	Hours of labor daily.
	Men.	Women.				Men.	Women.				Men.	Women.		
Iron workers	2		\$1 50	10										
Jobroom men	12		2 62	10										
Janitor	1		1 25	10										
Lumber measurers	10		1 60	10										
Lumberyard men	100		3 00	8										
Last makers	40		2 00	10		10		\$ 65	10					
Laborers	22		1 76	10		50		1 50	10		16		\$1 50	9
Laborers		2	75	9		213		1 25	10		3		1 40	10
Laborers	11		1 60	12		20		1 20	12		30		1 35	12
Laborers	2		2 00	12		9		1 10	12		2		70	12
Laborers	6		1 00	12		35		1 80	12		28		1 40	12
Labelers	13		1 10	8										
Millers	14		2 50	10		7		2 00	12		2		2 40	12
Millers	3		2 00	10										
Mounters	5		2 75	10										
Machinists	12		2 40	10		2		1 66	10		183		2 00	10
Machinists	2		1 75	10		10		2 50	10		34		2 10	10
Machinists		1	1 25	10		11		1 70	10		4		3 00	10
Machinists	16		2 25	10										
Moulders	105		1 75	10		79		2 25	10		16		2 85	10
Moulders	32		2 00	10		45		2 50	10		43		2 30	10
Moulders	2		3 75	10										
Machine hands	6		2 50	10		12		1 60	10		49		1 50	10
Machine hands	13		1 25	10		4		2 25	10		30		1 75	10
Machine hands	20		2 00	10		31		1 33	10		44		1 98	10
Machine hands	107		2 00	9										
Mill hands	1		75	10		3		1 25	10					
Malsters	2		2 00	10		1		1 75	10					
Millwrights	2		2 25	10		3		2 00	10		1		2 50	10
Messenger boy	1		34	9½										
Machine tenders	4		2 50	10		8		1 66	10		2		1 87	12
Night watchmen	1		1 66	10		1		2 00	10					
Nickel platers	2		2 25	10										
Oil makers	16		1 50	10										
Press feeders	2		1 00	10			1	85	10					
Press boys	4		40	10										
Pressmen	2		2 50	10			1	50	10					
Porters	2		1 00	10										
Paper bag makers	13		1 00	10			8	75	10					
Packers	8		1 66	10		2		1 60	10		1		50	10
Packers	5		1 80	10		2		1 50	10		1		65	10
President	1		3 00	10										
Pattern makers	1		3 00	10		4		2 75	10		1		5 00	10
Pattern makers	14		2 80	10		10		2 00	10					
Pipe fitters	11		2 00	10										
Pattern filers	2		2 25	10										
Paper makers	35		1 25	10			18	75	10					
Polishers	4		1 75	10		4		2 00	10					
Painters	1		1 80	10		48		1 50	10		10		1 85	10
Painters	141		2 25	10										
Pig makers		6	50	10										
Rulers	3		2 00	10										
Sorters	20		1 00	10										
Sculptor	1		5 00	8										
Saw setters		8	58½	10										
Steam fitters	2		2 50	10										
Straw men	14		1 66	10										
Stock men	3		1 66	10										
Slaters	5		3 00	10		3		2 50	10					
Spinners		25	63	10										
Secretary	1		3 00	10										
Spoke turners	4		1 65	10										
Spoke sawyers	1		1 65	10		1		2 70	10					
Spoke splitter	1		2 10	10										
Starch men	5		1 75	10										
Sewing girls		6	1 00	10			38	75	10					
Salesmen	3		2 50	10		3		1 75	10		1		3 00	
Salesmen	3		1 50	12		7		1 25	12		2		3 50	

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Miamisburg—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Office help.....	2	.....	\$5 00	10	5	.....	\$2 75	10	.....	.....	.....	.....
Off-bearer.....	1	.....	1 33	10	.....	.....	.....	.....	.....	.....	.....	.....
Painters	16	.....	1 75	10	6	.....	2 00	10	.....	.....	.....	.....
Paper makers.....	12	.....	2 00	10	16	.....	1 50	10	11	.....	\$1 25	10
Paper makers.....	2	.....	2 50	10	3	.....	1 87	10	3	.....	1 67	10
Paper makers.....	4	.....	1 33	10	.....	.....	.....	.....	.....	.....	.....	.....
Plasterers	8	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Plumber.....	1	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Preparers	3	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Rope makers	2	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Reporter.....	1	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Rag pickers.....	.....	11	67	10	.....	.....	.....	.....	.....	.....	.....	.....
Salesmen.....	15	.....	2 50	10	1	.....	3 33	10	.....	.....	.....	.....
Stonemasons.....	5	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Sawyer.....	1	.....	1 67	10	.....	.....	.....	.....	.....	.....	.....	.....
Superintendent	1	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Scuttlers	6	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Trimmers.....	12	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Teamsters	3	.....	1 35	10	.....	.....	.....	.....	.....	.....	.....	.....
Tailors.....	10	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Treasurer.....	1	.....	7 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Woodworkers.....	12	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Yardman	1	.....	1 33	10	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 601. Total number of women employed, 113.

Zanesville, Muskingum County.

Apprentices	3	.....	55	10	4	.....	90	10	4	.....	50	10
Apprentices	3	.....	75	10	1	.....	1 00	10	.....	.....	.....	.....
Bundlers.....	4	.....	1 40	10	.....	.....	.....	.....	.....	.....	.....	.....
Black-miths.....	4	.....	1 50	10	2	.....	2 25	10	1	.....	1 66	10
Blacksmiths.....	4	.....	2 00	10	2	.....	1 60	10	2	.....	3 50	10
Blacksmiths.....	15	.....	1 65	10	31	.....	1 75	10	.....	.....	.....	.....
Bobbin winders.....	.....	4	40	10	.....	.....	.....	.....	.....	.....	.....	.....
Bottle washers.....	50	.....	4 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Bottom fillers	16	.....	1 70	10	.....	.....	.....	.....	.....	.....	.....	.....
Bakers	8	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Bunch breakers.....	.....	3	85	10	.....	.....	.....	.....	.....	.....	.....	.....
Bench hands.....	7	.....	1 65	10	10	.....	1 50	10	.....	.....	.....	.....
Ball makers.....	3	.....	50	10	.....	.....	.....	.....	.....	.....	.....	.....
Boi'ler makers.....	2	.....	2 25	10	12	.....	2 10	10	.....	.....	.....	.....
Brewers	25	.....	1 65	10	1	.....	4 50	10	2	.....	3 00	10
Book-keepers	2	.....	2 50	10	1	.....	1 25	10	3	1	2 00	10
Book-keepers	1	.....	3 00	10	1	.....	3 34	10	.....	.....	.....	.....
Catchers	6	.....	3 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Clerks and salesmen.....	5	.....	4 00	10	15	.....	2 50	10	1	.....	2 00	10
Clerks and salesmen.....	4	.....	1 90	10	2	.....	2 75	10	5	2	1 00	10
Clerks and salesmen.....	2	.....	1 75	10	5	.....	3 00	10	.....	.....	.....	.....
Cigarmakers.....	5	.....	1 25	10	16	.....	1 33	10	.....	10	80	10
Cigarmakers.....	.....	2	67	10	15	.....	1 50	10	10	5	1 00	10
Cinder men.....	6	.....	1 70	12	.....	.....	.....	.....	.....	.....	.....	.....
Curriers	5	.....	1 67	10	.....	.....	.....	.....	.....	.....	.....	.....
Cappers.....	2	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Canners .....	.....	60	75	10	.....	.....	.....	.....	.....	.....	.....	.....
Compositors.....	1	9	2 00	10	7	.....	*	10	7	2	1 66	10
Corders	2	.....	1 00	10	1	.....	1 75	10	5	.....	50	10
Collectors.....	1	.....	1 50	10	2	.....	2 00	10	.....	.....	.....	.....
Cooper.....	1	.....	50	10	.....	.....	.....	.....	.....	.....	.....	.....
Cellar men.....	1	.....	1 70	10	1	.....	3 00	10	.....	.....	.....	.....
Cleaner	7	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Clerks in stores.....	395	.....	1 50	10	.....	48	75	10	.....	.....	.....	.....
Carpenters.....	2	.....	2 50	10	39	.....	1 75	10	34	.....	2 00	10
Carpenters.....	2	.....	2 65	10	.....	.....	.....	.....	.....	.....	.....	.....
Dragouts.....	2	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....

* 25 cents per thousand.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Zanesville—Continued.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Drivers	4		\$2 00	10	3		\$1 40	10	3		\$1 50	10
Drivers	4		1 34	10	1		1 25	10	1		1 00	10
Drivers	2		2 00	9								
Designers	2		2 68	10								
Dyers	1		1 75	10	8		1 00	10				
Drillers	2		63	10								
Dressmakers		25	75	10								
Engineers	4		2 75	10	3		1 50	10	2		2 00	10
Engineers	2		1 75	10	1		1 67	10	4		2 50	10
Firemen	3		1 50	10	2		1 70	12				
Foremen	1		1 00	10	1		3 00	10	1		2 25	9
Foremen	10		2 50	10	2		2 00	10	1		4 00	12
Foremen	13		3 00	10	4		3 25	10	1		3 33	10
Foremen	1		2 05	10								
Furnace man	1		2 00	10								
Feeders		2	1 00	10	1		42	10	1		40	10
Feeder	1		33	10								
Finishers	8		1 50	10	8		2 50	10				
Glaziers	1		1 50	10								
Grinders	3		1 25	10	1		1 00	10				
Hod carriers	30		1 50	10								
Heaters	9		5 00	10								
Heaters' helpers	9		1 75	10								
Hammer men	2		3 25	10	29		1 00	10	2	6	75	10
Helpers	4		40	10	1	45	80	10	2		1 75	10
Helpers	5		50	10	8		1 25	10	23		1 65	10
Helpers	2		67	10	9		1 50	10	6		1 70	12
Helpers	16		1 40	10								
Jiggersmen	2		50	10								
Kettleman	1		2 00	10								
Keepers	2		2 25	10								
Knitters		125	70	10								
Laborers	14		1 18	10		41	25	10		10	41	10
Laborers		4	67	10	223		1 30	10	7		1 20	10
Laborers	156		1 50	10	5		1 67	10	21		75	10
Laborers		75	40	10	1		1 16	10	9		2 00	10
Laborers	1		2 50	10	2		3 00	10	78		1 00	10
Laborers	48		1 15	10	173		1 25	10				
Millwright	1		3 75	10								
Mounters	5		1 60	10								
Mould maker	1		2 50	10								
Millers	9		2 00	10	6		1 40	10				
Machinists	6		1 35	10	3		2 50	10	9		1 50	10
Machinists	9		1 60	10	1		1 75	10	27		2 25	10
Machinists	8		1 65	10	1		1 75	8				
Metal men	8		1 70	10								
Moulders	1		1 87	10	5		1 75	10	25		2 50	10
Moulders	7		2 00	10	10		2 25	10	26		2 75	10
Managers	2		3 33	10	2		2 50	10				
Office help	6		4 00	10								
Puddlers	40		3 67	8								
Puddlers' helpers	80		1 83	8								
Pullups	7		40	8								
Painters	32		1 50	10	2		1 75	10	3		2 00	10
Painters	15		1 16 ³	10	1		67	10				
Plasterers	31		1 75	10								
Plumbers	12		2 25	10								
Pattern maker	1		1 75	10								
Packers		12	75	10	1		1 75	10		3	50	10
Pressmen	1		1 50	10	2		2 00	10				
President	1		5 00	10								
Rollers		6	1 35	10	5		6 00	8				
Roughers	10		2 50	8								
Rundowns	4		1 00	8								
Reporters	1		1 66	10	2		2 00	10				
Rulers		4	40	10								
Straighteners	4		2 00	8								
Shearmen	8		2 00	8								

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Port Clinton—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Edgers	2	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Engineers	3	.....	1 50	12	.....	.....	.....	.....	.....	.....	.....	.....
Laborers.....	8	.....	1 25	10	3	.....	\$1 35	10	.....	.....	.....	.....
Machine hands.....	2	.....	1 45	10	.....	.....	.....	.....	.....	.....	.....	.....
Miller.....	1	.....	3 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Painters	1	.....	1 50	10	15	.....	1 75	10	1	.....	\$2 50	10
Plasterers	10	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Stone mason.....	1	.....	2 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Setter.....	1	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Sawyer	1	.....	1 60	10	.....	.....	.....	.....	.....	.....	.....	.....
Street laborers	2	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Trimmers	2	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Tailors	4	.....	1 75	10	.....	6	50	10	.....	.....	.....	.....
Woodworkers.....	2	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 117. Total number of women employed, 31.

Melrose, Paulding County.

Burners.....	3	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Laborers	5	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Machine hands.....	19	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Sawyers	5	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Stirrup makers	2	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Tile moulders	4	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 38.

Paulding.

Apprentices	3	.....	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Bricklayers	15	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Blacksmiths	6	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Cutters	2	.....	1 25	10	1	.....	3 00	10	.....	.....	.....	.....
Compositors	2	.....	2 00	10	4	.....	1 75	10	.....	.....	.....	.....
Carpenters	25	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Clerks	25	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Dressmakers .....	.....	8	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Engineer	1	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Editors	2	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Firemen	1	.....	1 45	10	.....	.....	.....	.....	.....	.....	.....	.....
Headingmen	3	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Hod carriers.....	4	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Jointers.....	5	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Laborers.....	94	.....	1 30	10	60	.....	1 25	10	.....	.....	.....	.....
Off-bearers	1	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Plasterers	4	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Painters	5	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Skilled men	6	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Stone masons.....	3	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Teamsters	2	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Sawyers.....	2	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Tailors	2	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 278. Total number of women employed, 8.

Circleville, Pickaway County.

Brick moulders	15	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Burners	2	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Barbers	40	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Bricklayers	40	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Blacksmiths	20	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Coopers	15	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Carpenters.....	6	.....	1 75	10	80	.....	2 15	10	.....	.....	.....	.....

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Circleville—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Compositors	16	.....	\$1 70	10	.....	.....	.....	.....	.....	.....	.....	.....
Curriers	6	.....	1 60	10	.....	.....	.....	.....	.....	.....	.....	.....
Clerks in stores	218	22	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Dressmakers .....	.....	35	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Engineers	1	.....	1 50	10	4	.....	\$1 75	10	.....	.....	.....	.....
Editors	2	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Firemen	2	.....	1 40	10	.....	.....	.....	.....	.....	.....	.....	.....
H. & carriers	35	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Laborers	238	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Millers	7	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Moulders	3	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Off-bearers	6	.....	1 40	10	.....	.....	.....	.....	.....	.....	.....	.....
Papermen	75	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Pattern makers	2	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Plasterers	26	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Painters	75	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Plumbers	8	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Strawmen	59	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Stone masons	18	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Teamsters	1	.....	3 00	10	4	.....	1 35	10	.....	.....	.....	.....
Tanners	6	.....	1 65	10	.....	.....	.....	.....	.....	.....	.....	.....
Machinists	3	.....	1 40	10	8	.....	2 20	10	.....	.....	.....	.....
Tailors	22	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Wheelers	4	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Packers	110	.....	1 50	10	.....	75	85	10	.....	.....	.....	.....

Total number of men employed, 1,217. Total number of women employed, 137.

Waverly, Pike County.

Book-keepers .....	.....	2	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Bricklayers	2	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Blacksmiths	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Clerks in stores	13	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Carpenters	8	.....	1 50	10	8	.....	2 00	10	.....	.....	.....	.....
Compositors	4	.....	1 60	10	.....	.....	.....	.....	.....	.....	.....	.....
Distillers .....	.....	.....	.....	.....	25	.....	2 00	10	.....	.....	.....	.....
Dressmakers .....	.....	6	75	10	.....	.....	.....	.....	.....	.....	.....	.....
Millers	5	.....	2 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Machine hands	15	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Plasterers	3	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Painters	5	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Spoolers	5	.....	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Spittoon makers	2	.....	1 30	10	.....	.....	.....	.....	.....	.....	.....	.....
Stone masons	2	.....	2 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Street laborers	5	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Tailors	2	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Tanners	5	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Teamsters	5	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Weavers	4	.....	1 40	10	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 119. Total number of women employed, 8.

Atwater, Portage County.

Bricklayer	1	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Blacksmiths	5	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Carpenters	8	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Clerks in stores	3	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Dressmakers .....	.....	5	75	10	.....	.....	.....	.....	.....	.....	.....	.....
Moulders	2	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Painters	3	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Pottery hands	11	.....	50	10	9	.....	1 20	10	2	.....	1 25	10
Pottery hands	20	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Stone masons	3	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Turner	1	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Woodworkers	3	1 50	10

Number of men employed, 71. Number of women employed, 5.

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Kent.

Occupation.	No. employed.		Wages per day.	Hours of labor daily.	No. employed.		Wages per day.	Hours of labor daily.	No. employed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Blacksmiths	1	....	\$2 25	10	4	....	\$2 00	10	1	....	\$1 25	10
Book-keepers	3	....	2 25	10	1	....	2 20	10	....	....	....	....
Bricklayers	3	....	2 75	10	....	....	....	....	....	....	....	....
Burlers	3	2	1 25	10	....	....	....	....	....	....	....	....
Carpenters	41	....	2 00	10	12	....	1 40	12	....	....	....	....
Clerks	14	....	1 00	10	....	....	....	....	....	....	....	....
Compositors	2	....	1 75	10	....	....	....	....	....	....	....	....
Coopers	10	....	*	10	....	....	....	....	....	....	....	....
Dressers	8	....	2 25	10	....	....	....	....	....	....	....	....
Dress-makers .....	....	12	60	10	....	....	....	....	....	....	....	....
Dyers	7	....	1 17	10	....	....	....	....	....	....	....	....
Engineers	6	....	1 75	12	....	....	....	....	....	....	....	....
Fod carriers	3	....	1 25	10	17	....	1 25	10	....	....	....	....
Laborers	25	....	1 25	10	....	....	....	....	....	....	....	....
Machinists	20	....	2 25	10	....	....	....	....	....	....	....	....
Machine hands	3	....	1 87	10	....	....	....	....	....	....	....	....
Millers	5	....	2 50	12	2	....	1 75	10	....	....	....	....
Moulders	7	....	2 12½	10	....	....	....	....	....	....	....	....
Plasterers	1	....	1 75	10	....	....	....	....	....	....	....	....
Painters	1	....	2 00	10	15	....	1 75	10	....	....	....	....
Pattern makers	2	....	2 25	10	....	....	....	....	....	....	....	....
Salesmen	10	....	2 50	10	....	....	....	....	....	....	....	....
Spinners	7	....	78	10	....	20	50	10	....	....	....	....
Stone masons	2	....	2 75	10	....	....	....	....	....	....	....	....
Tailors	3	....	2 00	10	....	6	60	10	6	....	1 40	10
Wool combers	15	....	85	10	....	....	....	....	....	....	....	....
Wool dressers	3	....	1 75	10	....	....	....	....	....	....	....	....
Weavers	10	....	1 12	10	....	48	1 16	10	....	....	....	....

Total number of men employed, 273. Total number of women employed, 88.

* Eleven cents per pound.

[illegible]

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Ravenna—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Stone masons.....	3	.....	\$3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Tailors.....	3	.....	2 00	10	.....	6	\$ 75	10	.....	.....	.....	.....
Teasers	4	.....	2 00	9	3	.....	2 00	8	.....	.....	.....	.....
Trimmers.....	6	.....	2 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Weavers	3	2	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Wheelwright	1	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Woodcarver	1	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 363. Total number of women employed, 56.

Eaton, Preble County.

Blacksmiths.....	13	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Brick makers.....	5	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Burner	1	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Bakers.....	3	.....	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Bricklayers.....	7	.....	3 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Cigarmakers.....	5	.....	1 00	10	14	.....	1 50	10	4	.....	\$1 25	10
Cigarmakers	10	.....	1 66	10	14	17	*1	.....	.....	.....	.....	.....
Carpenters	28	.....	2 00	10	.....	2	1 00	10	.....	.....	.....	.....
Clerks in stores.....	14	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Dressmakers.....	.....	10	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Drivers	4	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Engineers	4	.....	2 00	10	4	.....	1 50	10	.....	.....	.....	.....
Firemen	2	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Hod carriers.....	9	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Laborers.....	29	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Machine hands.....	4	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Offbearers	5	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Printers	4	.....	*2	10	.....	.....	.....	.....	.....	.....	.....	.....
P asterers.....	8	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Painters	17	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Quarry men.....	16	.....	1 40	10	8	.....	1 50	10	.....	.....	.....	.....
Strippers ..	.....	6	1 25	10	.....	13	1 66	10	.....	.....	.....	.....
Sawyers.....	4	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Shoemakers.....	6	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Street laborers.....	16	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Stone masons.....	14	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Tile makers.....	4	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Tailors.....	5	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Wheelers	5	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 286. Total number of women employed 48.

*1 \$3 to \$7 per thousand. *2 25 cents per thousand.

Dupont, Putnam County.

Ax-handle makers.....	6	.....	1 60	10	.....	.....	.....	.....	.....	.....	.....	.....
Blacksmiths.....	2	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Clerks in stores.....	1	.....	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Dressmakers.....	.....	4	75	10	.....	.....	.....	.....	.....	.....	.....	.....
Plasterers	1	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Carpenters.....	6	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Painters	2	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Stavers.....	31	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Sawyers	6	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Tile makers.....	3	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 58. Total number of women employed, 4.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Ottawa.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Bottlers.....	2	.....	\$ 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Book-keepers.....	1	.....	1 95	10	1	.....	\$2 00	10	.....	.....	.....	.....
Blacksmiths.....	10	.....	2 00	10	1	.....	1 50	10	.....	.....	.....	.....
Bricklayers.....	5	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Compositors.....	5	.....	1 50	10	6	.....	1 75	10	.....	.....	.....	.....
Collectors.....	2	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Carpenters.....	5	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Clerks in stores.....	29	.....	1 37	10	.....	15	1 25	10	.....	.....	.....	.....
Dre-smakers.....	.....	8	75	10	.....	.....	.....	.....	.....	.....	.....	.....
Engineers.....	3	.....	1 50	10	1	.....	1 25	12	.....	.....	.....	.....
Frame builder.....	1	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Foremen.....	1	.....	2 40	10	3	.....	1 60	10	.....	.....	.....	.....
Fin-i-her-s.....	3	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Laborers.....	2	.....	1 00	10	4	.....	1 75	10	10	.....	\$1 25	10
Laborers.....	2	.....	1 50	10	1	.....	1 10	10	.....	.....	.....	.....
Millers.....	2	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Manager.....	1	.....	3 35	10	.....	.....	.....	.....	.....	.....	.....	.....
Painters.....	4	.....	1 75	10	1	.....	1 12	10	.....	.....	.....	.....
Polishers.....	4	.....	1 80	10	.....	.....	.....	.....	.....	.....	.....	.....
Plasterers.....	6	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Runners.....	2	.....	1 90	10	.....	.....	.....	.....	.....	.....	.....	.....
Sawyers.....	1	.....	2 50	10	1	.....	1 25	10	.....	.....	.....	.....
Setter.....	1	.....	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Shipping clerk.....	1	.....	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Sale-men.....	1	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Str-et laborers.....	35	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Stone ma-son-s.....	3	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Teamst-r-s.....	2	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Turners.....	4	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Tailors.....	4	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Yard man.....	1	.....	3 25	10	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 172. Total number of women employed, 23.

Mansfield, Richland County.

Apprentices ..	3	.....	35	10	2	.....	40	10	.....	.....	.....	.....
Brass finishers.....	7	.....	2 00	10	27	.....	2 50	10	.....	.....	.....	.....
Book binders.....	3	.....	1 25	10	.....	2	1 00	10	.....	.....	.....	.....
Brewers.....	1	.....	1 65	12	1	.....	3 00	12	.....	.....	.....	.....
Blacksmiths.....	27	.....	2 00	10	17	.....	1 75	9	12	.....	2 25	10
Blacksmiths.....	18	.....	2 66	10	.....	.....	.....	.....	.....	.....	.....	.....
Bakers.....	20	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Bakers' helpers.....	15	.....	90	10	.....	28	75	10	.....	.....	.....	.....
Book-keepers.....	1	.....	2 00	10	.....	1	1 00	10	2	.....	2 25	10
Book-keepers.....	2	.....	3 33	10	1	5	1 67	10	1	.....	3 00	10
Book-keepers.....	18	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Benders and rounders.....	4	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Burnishers.....	2	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Bricklayers.....	12	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Cigar strippers.....	2	.....	40	9	1	.....	45	10	11	.....	85	10
Cigar strippers.....	.....	28	85	10	.....	.....	.....	.....	.....	.....	.....	.....
Cigarmakers.....	17	.....	1 50	10	5	.....	1 75	9	115	.....	1 50	10
Carpenters.....	40	.....	2 00	9	16	.....	2 25	10	5	.....	1 65	9
Carpenters.....	9	.....	2 10	9	.....	.....	.....	.....	.....	.....	.....	.....
Carriage wood workers.....	6	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Compositors.....	20	.....	1 50	10	.....	4	1 00	10	7	.....	1 31	9
Compositor.....	1	.....	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Candy makers.....	5	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Coopers.....	18	.....	1 75	11	.....	.....	.....	.....	.....	.....	.....	.....
Cigar packers.....	2	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Cellar man.....	1	.....	1 55	12	.....	.....	.....	.....	.....	.....	.....	.....
Clerks in stores.....	32	.....	1 70	10	.....	29	79	10	.....	.....	.....	.....
Dressmakers.....	.....	21	75	10	.....	.....	.....	.....	.....	.....	.....	.....
Engineers.....	6	.....	1 50	10	5	.....	2 00	10	3	.....	1 65	11
Engineers.....	3	.....	1 85	12	1	.....	1 75	9	1	.....	1 25	10
Editors.....	1	.....	2 25	10	8	.....	2 00	10	.....	.....	.....	.....

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Mansfield—Concluded.

Occupation.	No. employed.		Wages per day.	Hours of labor daily.	No. employed.		Wages per day.	Hours of labor daily.	No. employed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Finishers	50	.....	\$2 25	9	.....	.....	.....	.....	.....	.....	.....	.....
Flour packers	5	.....	1 75	9	.....	.....	.....	.....	.....	.....	.....	.....
Firemen	1	.....	1 25	10	2	.....	\$1 50	10	1	.....	\$1 25	10
Firemen	1	.....	1 65	10	.....	.....	.....	.....	.....	.....	.....	.....
Filers	6	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Foremen	4	.....	3 00	10	6	.....	3 50	10	5	.....	2 25	10
Foremen	2	.....	2 75	10	2	.....	1 65	10	.....	.....	.....	.....
Hod carriers	12	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Helpers	3	.....	1 50	10	12	.....	1 25	10	3	.....	1 00	10
Helper	1	.....	50	10	.....	.....	.....	.....	.....	.....	.....	.....
Kettle man	1	.....	1 67	12	.....	.....	.....	.....	.....	.....	.....	.....
Laborers .....	.....	.....	.....	.....	25	.....	1 25	10	23	.....	1 00	10
Laborers	10	.....	1 60	10	2	.....	1 10	12	1	.....	1 90	12
Laborers	7	.....	1 10	10	.....	.....	.....	.....	.....	.....	.....	.....
Machinists	34	.....	2 25	10	39	.....	1 90	10	35	.....	1 85	10
Machinists	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Millers	5	.....	1 75	11	7	.....	1 87	12	.....	.....	.....	.....
Millers' helpers	3	.....	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Millers' sweepers	2	.....	1 00	11	.....	.....	.....	.....	.....	.....	.....	.....
Moulders	10	.....	2 00	10	31	.....	1 90	10	3	.....	2 50	10
Moulders .....	.....	.....	.....	.....	72	.....	2 25	10	.....	.....	.....	.....
Machine men	2	.....	2 00	10	16	.....	1 85	10	15	.....	1 25	10
Machine men	2	.....	1 50	10	8	.....	1 65	10	3	.....	1 35	10
Night watchmen	7	.....	1 50	12	.....	.....	.....	.....	.....	.....	.....	.....
Office clerks	4	.....	2 50	10	9	.....	2 00	10	3	.....	2 80	10
Painters .....	.....	1	75	10	4	.....	1 75	10	.....	3	1 00	10
Painters	22	.....	2 00	10	23	.....	1 65	9	20	.....	1 50	10
Packers	4	.....	1 25	10	2	.....	1 00	10	1	.....	60	10
Polishers	5	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Platers and roughers	3	.....	75	10	.....	.....	.....	.....	.....	.....	.....	.....
Pattern makers	4	.....	2 50	10	1	.....	2 75	10	2	.....	3 00	10
Plasterers	11	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Plumbers	5	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Pressmen	3	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Roofers	4	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Shipping clerks	2	.....	2 00	10	2	.....	1 50	10	.....	.....	.....	.....
Salesmen	21	.....	3 00	10	8	.....	2 50	10	2	.....	1 85	10
Salesmen	3	.....	3 34	10	.....	.....	.....	.....	.....	.....	.....	.....
Suspender makers .....	.....	147	75	10	.....	5	50	10	.....	14	1 00	10
Soap maker	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Stove mounters	12	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Street laborers	10	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Stone masons	10	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Type writers .....	.....	1	1 00	10	5	.....	2 00	10	.....	3	75	10
Type writers	1	.....	3 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Trimmers	1	.....	2 25	10	9	.....	1 80	10	.....	.....	.....	.....
Tool makers	8	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Tinners	15	.....	1 75	10	3	.....	2 00	10	5	.....	2 25	10
Tailors	15	.....	2 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Teamsters	9	.....	1 25	10	4	.....	1 25	9	1	.....	1 25	12
Teamsters	1	.....	1 67	12	4	.....	1 60	10	.....	.....	.....	.....

Total number of men employed, 1,184. Total number of women employed, 407.

Chillicothe, Ross County.

Apprentices	1	.....	1 25	10	3	.....	34	10	1	.....	84	10
Apprentices	1	.....	1 00	10	16	.....	75	10	1	.....	42	10
Apprentices	1	.....	25	10	.....	.....	.....	.....	.....	.....	.....	.....
Bricklayers	15	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Bookbinders	1	.....	1 75	10	2	.....	2 50	10	.....	.....	.....	.....
Book-keepers	1	.....	1 75	10	.....	1	66	10	2	.....	1 50	10
Book-keepers	1	.....	1 60	10	2	.....	2 00	10	.....	.....	.....	.....
Blacksmiths	10	.....	1 50	10	11	.....	2 25	10	4	.....	1 75	10
Blacksmiths	3	.....	2 50	10	4	.....	2 00	10	.....	.....	.....	.....
Box makers	2	.....	1 60	10	.....	.....	.....	.....	.....	.....	.....	.....
Brewers	1	.....	2 10	10	1	.....	1 75	10	1	.....	5 00	10

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Chillicothe—Continued.

Occupation.	No. employed.		Wages per day.	Hours of labor daily.	No. employed.		Wages per day.	Hours of labor daily.	No. employed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Brewers.....	1		\$4 25	10								
Beamsmen	3		1 50	10	2		\$1 25	10				
Builders	18		1 75	10								
Bridgemen.....	36		2 00	10								
Boiler makers.....	1		2 25	10	3		1 65	10	5		\$2 50	10
Cupola tender.....	1		1 50	10								
Core maker.....	1		1 75	10								
Curriers.....	5		2 50	10	6		2 00	10				
Cappers.....	6		1 50	10	3		1 75	10				
Coopers.....	30		1 25	10								
Corn assorters.....		39	50	10								
Cutters	3		50	10	6		1 30	10	1		1 00	10
Cutters.....	1		1 17	10	1		2 17	10	1		2 54	10
Cutters.....	1		2 67	10								
Clerks.....	1		4 50	10		1	42	10	7		1 50	10
Clerks.....	3		2 00	10								
Carpenters.....	3		1 65	10	5		1 50	10	3		1 85	10
Carpenters..	2		1 25	10	46		2 00	10	2		1 80	10
Compositors.....	1		84	10	5		1 14	10	2		34	10
Compositors.....	10		1 00	10	2		2 00	10	2		2 50	10
Compositors.....	1		1 34	10	6		50	10	5		1 50	10
Cigar makers.....	3		1 25	10	5		1 75	10	2		1 00	10
Cigar makers.....	4		2 00	10								
Clerks in stores.....	39		75	10	63		1 50	10	62		1 00	10
Cellarmen	1		2 10	10	1		1 75	10				
Dressmakers.....		35	75	10								
Driller.....	6		1 75	10								
Electricians	1		2 50	10								
Engineers.....	73		3 50	10	5		1 25	10	1		1 35	10
Engineers.....	2		1 75	10	1		2 50	10	5		1 50	10
Engineers.....	3		1 62	10	17		2 00	10	2		1 40	10
Editors	1		84	10	1		1 87	10	2		3 00	10
Editors	1		2 00	10	3		2 50	10				
Foremen	1		1 84	10	2		2 25	10	1		3 25	10
Foremen.....	1		2 67	10	1		3 33	10	1		3 90	10
Foremen.....	2		3 00	10	4	1	2 00	10	4		1 50	10
Foremen.....	1		1 75	10	2		2 50	10				
Finishers		5	1 25	10	5	3	50	10				
Firemen	72		1 75	10	2		1 50	10				
Grinders	3		75	10								
Gang bosses.....	1		1 75	10	1		1 50	10				
Helpers.....	5		75	10	4	8	1 00	10	2		1 25	10
Helpers.....	8	24	50	10	3		1 34	10	7		34	10
Helpers.....	4		57	10	3		2 00	10	1	5	84	10
Helpers.....		5	1 14	10	28		1 40	10				
Hod carriers.....	24		1 25	10								
Inspectors	4		1 50	10								
Knitters		6	50	10								
Labelers		9	1 00	10		3	84	10		5	60	10
Laborers.....	171		1 25	10	34		1 00	10	8		50	10
Laborers.....	10		1 30	10	4		75	10	20		55	10
Laborers.....	39		1 10	10		12	60	10	7		2 25	10
Laborers.....	6		1 75	10	6		1 50	10				
Moulders	3		2 25	10	1		3 00	10	2		2 00	10
Machine men.....	1		2 25	10	2		2 67	10	11		2 00	10
Machine men.....	2		1 00	10	25		1 25	10	1		1 35	10
Machine men.....	2		1 50	10								
Machinists.....	4		1 65	10	6		1 75	10	8		2 00	10
Machinists.....	6		2 50	10	4		3 25	10	24		2 25	10
Machinists	2		2 40	10								
Millers.....	3		3 00	10	1		2 00	10	1		2 25	10
Master mechanic.....	1		5 00	10								
Oilers.....	4		1 35	10								
Plumbers.....	6		2 00	10								
Plasterers.....	15		1 75	10								
Pressmen	2		1 00	10								
Painters.....	1		1 00	10	15		1 50	10	1		3 50	10
Painters.....	5		2 00	10	2		1 75	10				
Packers.....	1		2 00	10	1		1 25	10				

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Chillicothe—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Processors	1	...	\$3 35	10	1	...	\$1 75	10	...	...	...	...
Porters	1	...	1 75	10	...	...	...	...	...	...	...	...
Piece workers	10	...	2 00	10	...	...	...	...	...	...	...	...
Pumpers	18	...	1 25	10	...	2	1 00	10	...	...	...	...
Pattern makers	3	...	2 50	10	...	...	...	...	...	...	...	...
Repairers	8	...	1 75	10	1	...	1 50	10	...	...	...	...
Rag men	2	...	1 50	10	...	7	84	10	1	...	1 80	10
Reporter	1	...	1 50	10	...	...	...	...	...	...	...	...
Stone masons	10	...	2 25	10	...	...	...	...	...	...	...	...
Secretary	1	...	3 90	10	...	...	...	...	...	...	...	...
Salesmen	8	...	2 00	10	...	...	...	...	...	...	...	...
Solicitors	2	...	1 00	10	...	...	...	...	...	...	...	...
Spoolers .....	...	3	25	10	...	...	...	...	...	...	...	...
Shoe fitters .....	...	2	50	10	...	...	...	...	...	...	...	...
Superintendent	1	...	3 90	10	...	...	...	...	...	...	...	...
Turners	2	...	2 50	10	1	...	1 58	10	...	...	...	...
Teamsters	1	...	1 17	10	1	...	1 75	10	2	...	2 10	10
Teamsters	2	...	1 35	10	1	...	1 00	10	...	...	...	...
Trimmers	1	...	1 75	10	4	...	2 00	10	...	...	...	...
Tailors	16	...	2 00	10	...	...	...	...	...	...	...	...
Woodworkers	10	...	1 25	10	3	...	2 00	10	1	...	1 75	10
Woodworkers	1	...	2 25	10	...	...	...	...	...	...	...	...
Watchmen	1	...	1 00	10	2	...	1 30	10	...	...	...	...
Yard men	8	...	1 25	10	3	...	1 40	10	2	...	1 17	10

Total number of men employed, 1,426. Total number of women employed, 176.

Fremont, Sandusky County.

Apprentices	2	...	75	10	...	...	...	...	...	...	...	...
Bricklayers	18	...	3 50	10	...	...	...	...	...	...	...	...
Boiler makers	8	...	2 25	10	...	...	...	...	...	...	...	...
Bow finishers	10	...	2 00	10	...	...	...	...	...	...	...	...
Brewer	1	...	3 50	10	...	...	...	...	...	...	...	...
Blacksmiths	3	...	1 70	10	9	...	1 50	10	6	...	1 75	10
Blacksmiths	6	...	2 25	10	19	...	2 00	10	...	...	...	...
Book-keepers	1	1	1 00	10	2	...	1 50	10	2	...	2 50	10
Cabinet makers	6	...	1 50	10	...	...	...	...	...	...	...	...
Cellar men	2	...	1 75	10	...	...	...	...	...	...	...	...
Clerks	1	...	2 00	10	160	...	1 10	10	...	20	75	10
Carpenters	2	...	1 50	10	6	...	1 75	10	20	...	2 00	10
Compositors	8	...	1 75	10	...	1	1 00	10	...	...	...	...
Dressmakers .....	...	20	75	10	...	...	...	...	...	...	...	...
Drivers	2	...	1 50	10	1	...	1 00	10	...	...	...	...
Die maker	1	...	1 50	10	...	...	...	...	...	...	...	...
Engineers	6	...	1 50	10	1	...	1 75	10	1	...	1 00	10
Editors	1	...	2 50	10	1	...	1 75	10	...	...	...	...
Finishers	5	...	3 00	10	...	...	...	...	...	...	...	...
Forgers	4	...	3 00	10	...	...	...	...	...	...	...	...
Filers	4	...	1 25	10	...	...	...	...	...	...	...	...
Firemen	2	...	1 30	10	...	...	...	...	...	...	...	...
Fitters	2	...	1 50	10	...	...	...	...	...	...	...	...
Foremen	1	...	2 25	10	3	...	2 50	10	1	...	2 00	10
Grinders	8	...	3 50	10	...	...	...	...	...	...	...	...
Hod carriers	15	...	1 50	10	...	...	...	...	...	...	...	...
Helpers	2	...	50	10	1	...	75	10	2	...	1 35	10
Helpers .....	...	6	84	10	2	...	1 00	10	...	...	...	...
Hammer men	2	...	2 00	10	...	...	...	...	...	...	...	...
Janitor	1	...	...	10	...	...	...	...	...	...	...	...
Kettle man	1	...	1 50	10	...	...	...	...	...	...	...	...
Laborers	20	...	1 00	10	12	...	1 75	10	6	...	75	10
Laborers	2	...	84	10	116	...	1 25	10	20	...	1 50	10
Laborers	22	...	1 37	10	...	...	...	...	...	...	...	...
Lamp lighter	1	...	1 50	10	...	...	...	...	...	...	...	...
Millers	2	...	1 75	10	2	...	2 00	10	...	...	...	...
Machinists	1	...	3 00	10	14	...	2 25	10	4	...	1 75	10

BUREAU OF STATISTICS OF LABOR.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Fremont—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Machinists	1		\$2 00	10								
Malsters	1		2 00	10								
Managers	2		3 00	10	2		\$2 00	10				
Machine men	60		2 00	10	3		2 70	10				
Moulders	3		1 50	10	6		2 00	10				
Plast-rers	15		2 25	10								
Plater	1		1 75	10								
Polishers	12		1 75	10								
Planers	4		1 50	10								
Pattern makers	2		2 00	10	2		2 25	10				
Printers	4		1 30	10	2		1 50	10	21		\$1 75	10
Painters	4		2 00	10	2		1 33	10				
Plumbers	4		2 50	10								
Sawyer	1		2 50	10								
Superintendent	1		3 33	10								
Salesmen	4		4 00	10								
Sewers	10		75	10	25		50					
Stone masons	14		2 50	10								
Turner	1		1 50	10								
Tailors	13		2 25	10								
Trimmers	4		2 00	10	1		2 25	10				
Wipers		5	60	10								
Wrappers	1		1 00	10								
Wheelwright	1		2 00	10								
Woodworker	4		1 40	10	2		1 75	10	1		2 25	10
Woodworkers	4		2 00	10								

Total number of men employed, 817. Total number of women employed, 53.

Sciotoville, Scioto County.

Book-keeper	1		2 70	10								
Foremen	2		2 50	10								
Laborers	50		1 15	10								
Moulders	4		1 90	10								
Off-bearers	4		80	10								
Pan tenders	4		1 45	10								
Pressers	4		1 75	10								
Setters	2		1 50	10								
Wheelborrow men	4		1 45	10								

Total number of men employed, 75. Total number of women employed, none.

Portsmouth.

Apprentices	1		34	10	4		50	10	1		60	10
Apprentices	6		66	10	1		1 75	10	2		1 60	10
Apprentices		4	60	10	2		1 40	10	3		70	10
Apprentices	1		90	10	1		1 10	10				
Bakers	2		1 50	10								
Beam hands	2		1 50	10								
Blacksmiths	1		2 60	10	1		2 20	10	9		2 00	10
Blacksmiths	1		1 80	10	1		1 40	10	4		2 50	10
Blacksmiths	15		1 75	10								
Body makers	2		1 75	10								
Book-keepers	3		3 00	10	1		1 75	10	1		2 70	10
Book-binders	2		2 25	10	1	1	75	10				
Boiler makers	1		2 50	10	8		2 35	10				
Boiler washers	1		1 50	10								
Bottomers	39		2 10	10	17		50	10	15		55	10
Bottomers	20		3 00	10								
Boy picker	1		84	10								
Box makers	2		35	10		10	40	10		11	34	10
Breakers	4		1 25	10								
Buffers	3		1 25	10								

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Portsmouth—Continued.

Occupation.	No. employed.		Wages per day.	Hours of labor daily.	No. employed.		Wages per day.	Hours of labor daily.	No. employed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Brewers.....	1		\$4 10	10	7		\$2 00	10				
Carpenters.....	1		1 50	10	1		2 20	10	1		\$1 90	10
Carpenters.....	2		1 80	10	6		1 70	10	1		1 60	10
Carpenters.....	40		2 00	10	7		1 85	10				
Carriers.....	2		1 75	10								
Cabinet men.....	9		1 34	10	18		1 50	10				
Cigarmakers.....	2		2 00	10	15		1 50	10	5		1 75	10
Carders.....	4		2 50	10		3	75	10				
Car repairers.....	6		1 50	10	1		1 60	10				
Clerks.....	3		3 33	10	1		2 50	10				
Clerks in stores.....	180		1 25	10		20	75	10				
Cleaners.....	2		2 50	10								
Colliers.....	35		1 50	10								
Coaler.....	1		1 50	10								
Coach cleaners.....	5		1 20	10								
Cupalo tenders.....	3		1 50	10								
Cutters.....	2		2 00	10	8		2 55	10	6		85	10
Cutters.....	4		66	10	6		3 00					
Dyers.....	4		2 00	10								
Editors.....	2		3 34	10	2		2 00	10	2		3 00	10
Engineers.....	1		1 50	10	1		2 25	10	1		67	10
Engineers.....	2		1 75	10	1		1 70	10	21		3 50	10
Engineers.....	1		1 35	10	1		1 00	10	1		1 84	10
Engineers.....	3		2 00	10								
Finishers.....	6		50		5		3 00	10	20		1 00	10
Fillers.....	2		1 10	10								
Foremen.....	2		1 50	10	3		6 00	10	1		2 70	10
Foremen.....	7		2 50	10	1		3 00	10	1		3 25	10
Foremen.....	1		3 30	10	1		2 75	10	1		1 67	10
Foremen.....	2		2 00	10	1		3 87	10				
Foundryman.....	1		2 25	10								
Firemen.....	2		1 50	10	21		1 75	10				
Grinders.....	3		3 00	10	2		1 50	10				
Hawker.....	1		75	10								
Helpers.....	10		50	10	10		1 50	10	1		81	10
Helpers.....		7	50	10	2		1 13	10	2		1 35	10
Helpers.....	4		1 30	10	1		1 40	10	1		1 40	10
Helpers.....	4		2 00	10	3		1 00	10	2		1 75	10
Heaters.....	7		4 00	10								
Hammermen.....	3		6 00	10								
Hostlers.....	2		2 00	10	1		1 60	10	2		1 75	10
Hub turners.....	3		2 50	10	5		1 50	10				
Inside men.....	10		1 25	10								
Ironers.....		3	66	9								
Inspectors.....	3		1 60	10	2		1 50	10				
Knitters.....		13	50	10								
Laborers.....	81		1 10	10	1		1 30	10	42		1 15	10
Laborers.....	5		1 20	10	34		1 00	10	93		1 50	10
Laborers.....	1		80	10	14		75	10	12		50	10
Laborers.....	104		1 25	10	31		1 25	9				
Lasters.....	10		2 30	10		42	55	10	11		2 00	10
Managers.....	1		2 00	10	1		3 00	10	2		2 50	10
Machinists.....	16		2 25	10	3		2 50	10	2		2 56	10
Machinists.....	2		2 40	10	2		2 30	10	1		2 20	10
Machinists.....	5		2 60	10								
Machine hands.....	15		1 34	10	5		1 25	10	10		2 00	10
Machine hands.....		25	1 20	10	2		1 87	10	1		1 80	10
Machine hands.....	4		1 75	10	1		1 60	10		15	1 90	10
Machine hands.....	34		1 50	10	5		2 25	10		6	42	10
Marker.....		1	66	10								
Master mechanic.....					1		4 81	10				
Mounters.....	10		2 50	10								
Moulders.....	34		3 00	10	2		1 65	10	4		1 90	10
Moulders.....	11		2 50	10	1		1 00	10	4		1 80	10
Muck shearmen.....	9		1 60	10								
Nickel plater.....	1		1 50	10								
Oar setter.....	1		1 25	10								
Ore diggers.....	45		1 25	10								

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Fostoria—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Clerks in stores	50	.....	\$1 75	14	.....	16	\$ 75	14	1	.....	\$1 66	10
Coopers	21	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Carpenters.....	51	.....	2 00	10	8	.....	1 75	10	.....	.....	.....	.....
Dress-makers .....	.....	25	65	10	.....	.....	.....	.....	.....	.....	.....	.....
Engineers.....	5	.....	1 60	10	2	.....	1 50	10	2	.....	1 33	10
Hod carriers.....	12	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Laborers.....	50	.....	90	10	2	.....	1 25	10	12	.....	1 33	10
Laborers.....	23	.....	2 00	10	13	.....	1 30	10	.....	.....	.....	.....
Machine hands.....	2	.....	2 00	10	2	.....	1 25	10	7	.....	1 85	10
Machinists.....	12	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Moulders	15	.....	2 00	10	2	.....	2 25	10	.....	.....	.....	.....
Pattern makers	4	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Painters	30	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Plasterers.....	11	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Stone cutters	1	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Street laborers.....	15	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Tailors.....	13	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 405. Total number of women employed, 41.

Tiffin.

Apprentices	2	.....	50	10	1	.....	66	10	.....	.....	.....	.....
Blacksmiths ..	15	.....	1 50	10	5	.....	2 00	10	2	.....	2 25	10
Blacksmiths	20	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Benders.....	6	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Bottler.....	1	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Book-keepers	1	.....	2 50	10	1	.....	1 90	10	1	.....	2 00	10
Burnisher	1	.....	1 60	10	.....	.....	.....	.....	.....	.....	.....	.....
Brewers	1	.....	2 00	10	3	.....	2 65	10	.....	.....	.....	.....
Core makers.....	6	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Compositors	8	.....	1 33	10	1	.....	2 00	10	4	.....	1 50	10
Carriers.....	7	.....	90	10	.....	.....	.....	.....	.....	.....	.....	.....
Cobbler	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Cellarman	1	.....	1 87	10	.....	.....	.....	.....	.....	.....	.....	.....
Carders	3	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Carpenters.....	10	.....	2 00	10	3	.....	1 62	10	4	.....	1 75	10
Cabinet makers.....	12	.....	1 65	10	.....	.....	.....	.....	.....	.....	.....	.....
Chair makers	2	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Cupola tenders.....	6	.....	2 00	10	1	.....	1 35	10	.....	.....	.....	.....
Clerks.....	1	.....	2 00	10	6	.....	3 00	10	.....	.....	.....	.....
Drivers	2	.....	1 75	10	2	.....	2 00	10	.....	.....	.....	.....
Draughtsmen	2	.....	2 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Drillers	8	.....	1 40	10	.....	.....	.....	.....	.....	.....	.....	.....
Dyers	7	.....	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Editors.....	1	.....	2 00	10	4	.....	2 50	10	1	.....	2 75	10
Engineers	3	.....	1 25	10	1	.....	1 65	10	1	.....	1 75	10
Engineers.....	5	.....	2 00	10	1	.....	1 35	10	1	.....	1 50	10
Finishers .....	.....	10	50	10	7	.....	75	10	1	.....	1 75	10
Fitters	22	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Foremen.....	1	.....	3 00	10	1	.....	2 50	10	.....	.....	.....	.....
Grinders.....	9	.....	1 35	10	.....	.....	.....	.....	.....	.....	.....	.....
Helpers	3	.....	1 25	10	8	.....	84	10	2	.....	1 40	10
Helpers	2	.....	67	10	1	.....	50	10	19	.....	63	10
Heeler	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Laster.....	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Lathe hands.....	13	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Laborers.....	4	.....	1 62	10	12	.....	63	10	16	.....	1 00	10
Laborers.....	11	.....	1 10	10	3	.....	1 75	10	46	.....	1 25	10
Laborers.....	31	.....	1 40	10	3	.....	1 50	10	.....	.....	.....	.....
Millers.....	5	.....	1 75	10	3	.....	2 25	10	.....	.....	.....	.....
Mounters	9	.....	1 85	10	.....	.....	.....	.....	.....	.....	.....	.....
Machine hands.....	2	.....	1 25	10	3	.....	1 63	10	41	.....	1 75	10
Machinists.....	7	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Malster	1	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Moulders	12	.....	3 50	10	13	.....	3 00	10	11	.....	2 00	10
Night watchman.....	1	.....	1 25	10	1	.....	1 75	10	.....	.....	.....	.....

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Tiffin—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.	Wages per day.	Hours of labor daily.	No. em- ployed.	Wages per day.	Hours of labor daily.
	Men.	Women.								
Publisher	1		\$2 50	10						
Planers	14		1 50	10						
Painters	8		1 25	10	6	\$1 50	10	1	\$1 75	10
Painters	27		2 00	10						
President	1		6 66	10						
Pattern makers.....	8		2 00	10						
Salesmen	2		3 00	10	1	2 75	10	1	1 75	10
Superintendents.....	1		6 66	10	1	3 25	10			
Secretary	1		3 33	10						
Sawyers.....	4		1 75	10	5	1 40	10			
Store keeper.....	1		1 25	10						
Sewer	1		2 12	10						
Shoe fitters.....		3	80	10						
Spinners	1		2 06	10		10 60	10			
Trimmers.....	1		1 75	10	3	1 50	10	1	1 25	10
Trimmers	1		2 00	10	5	2 75	10			
Woodworkers.....	9		2 50	10	5	2 00	10	5	1 50	10
Woodworkers.....	2		1 20	10	12	1 63	10	28	1 60	10
Washers	2		1 40	10	1	1 50	10			
Weavers	6		1 25	10		20 1 00	10			

Total number of men employed, 667. Total number of women employed, 44.

Anna, Shelby County.

Engineers.....	1		1 50	10						
Machine men.....	25		1 35	10	14	1 25	10	7	1 50	10

Total number of men employed, 47. Total number of women employed, none.

Sidney.

Assistant manager.....	1		3 00	10						
Auditor	1		4 25	10						
Apprentices	1		1 50	10	2	50	10			
Belters.....	4		1 25	10						
Bricklayers	5		3 00	10						
Blacksmiths	1		1 75	10	15	2 00	10	2	1 50	10
Blacksmiths	3		1 80	10	2	2 13	10			
Buyers.....	1		2 00	10	1	1 50	10			
Book-keepers	1		3 33	10	1	84	10	1	3 00	10
Book-keepers	3		2 00	10	1	2 50	10	1	1 66	10
Book-keepers	1		1 50	10						
Brewers	1		5 00	10	11	2 00	10			
Bent men.....	3		1 50	10						
Correspondent.....	1		3 33	10						
Clerks in stores.....	48		1 50	10		13 80	10			
Cigarmakers		2	1 33	10	2	2 00	10	2	34	10
Cigarmakers.....	2		1 50	10						
Cabinet makers.....	20		2 25	10						
Carpenters.....	4		1 75	10	8	2 10	10			
Carriers	2		2 00	10						
Dressmakers		12	60	10						
Drillers	3		1 25	10						
Engineers	2		1 67	10	1	1 25	10	2	1 50	10
Engineers.....	2		2 00	10						
Editors	1		2 50	10	1	1 50	10			
Foremen.....	2		2 50	10	2	2 25	10	1	2 25	10
Finishers	6		1 75	10	11	1 65	10			
Grinders.....	2		1 60	10						
Helpers	1		75	10	1	85	10	5	1 25	10
Helpers	4		1 33	10	1	1 65	10	1	1 15	10
Helpers	1		70	10	1	50	10			
Hod carriers.....	8		1 25	10						
Ironers	3		1 00	10						

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Sidney—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Lumber pilers	2		\$1 25	10								
Lumber cutters	2		1 50	10								
Laborers	1		75	10	56		\$1 25	10	2		\$1 30	10
Laborers	8		1 00	10	17		1 50	10	1		1 35	10
Laborers	8		1 15	10	15		1 10	10				
Machinists	15		1 50	10	2		1 00	10	5		1 75	10
Machinists	2		2 25	10	15		1 66	10	1		1 67	10
Moulders	15		2 25	10	14		1 66	10				
Machine men	25		1 50	10	10		2 00	10	2		1 25	10
Machine men	55		1 65	10	2		1 85	10	1		1 75	10
Managers	2		5 00	10	1		2 00	10	1		3 34	10
Managers	1		2 50	10								
Millers	2		1 75	10	1		2 00	10				
Office men	2		1 25	10	1		1 50	10				
Off-bearer	1		1 50	10								
Pattern makers	1		2 50	10								
Pork packers	5		1 50	10								
Plasterers	8		2 00	10								
Printers	4		1 50	10		1	50	10	5		1 34	10
Pressman	1		2 33	10								
Painters	9		1 75	10	1		75	10	3		1 00	10
Painters	1		2 00	10	6		1 50	10				
Riveters	4		2 00	10								
Strippers		2	17	10	1		25	10	1		34	10
Sawyers	2		1 25	10	1		2 00	10				
Slab cutter	1		1 25	10								
Setter	1		1 50	10								
Stove mounters	4		1 25	10								
Stockmen	6		1 50	10								
Starchers		3	65	10								
Stone masons	4		2 50	10								
Salesmen	2		2 50	10	1		3 34	10	1		1 50	10
Trimmers	1		1 00	10	1		2 00	10	1		2 25	10
Tailors	10		2 00	10								
Tinners	3		1 75	10								
Tanners	5		1 50	10								
Turners	4		1 66	10								
Teamsters	6		1 50	10								
Watchmen	1		1 50	10								

Total number of men employed, 610. Total number of women employed, 33.

Alliance, Stark County.

Boiler makers	3		\$2 00	10								
Book-keepers	1		1 50	10								
Bricklayers	6		2 75	10								
Blacksmiths	7		2 25	10								
Clerks in stores	16		1 00	10		8	\$ 40	10				
Carpenters	4		2 25	10	27		2 00	10				
Dressmakers		20	50	10								
Engineers	4		1 50	10								
Laborers	2		1 25	10	5		1 50	10	2		\$1 00	10
Millers	1		2 00	10								
Machine hands	7		2 00	10								
Mounters	1		1 50	10								
Moulders	5		2 00	10								
Machinists	4		2 00	10	3		1 75	10				
Painters	15		2 00	10								
Plasterers	4		2 00	10								
Stone masons	5		3 50	10								
Tailors	6		1 50	10		12	65	10				

Total number of men employed, 128. Total number of women employed, 40.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Canton.

Occupation.	No. employed.		Wages per day.	Hours of labor daily.		No. employed.		Wages per day.	Hours of labor daily.		No. employed.		Wages per day.	Hours of labor daily.
	Men.	Women.				Men.	Women.				Men.	Women.		
Agents	5		\$1 50	10										
Apprentices	2		2 00	10		1		\$ 50	10					
Boys	35		1 70	10										
Blowers	5		3 00	10										
Boiler makers	4		1 50	10		35		2 26	10					
Box makers	17		1 50	10										
Book-keepers	1		1 25	10										
Blade forger	1		3 00	10										
Bridge fitters	40		1 80	10		3		1 75	10					
Blacksmiths	6		2 50	10		20		2 60	10		3		\$1 75	10
Blacksmiths	27		1 80	10		4		2 20	10		24		1 70	10
Blacksmiths	28		2 00	10		61		2 06	10					
Carpenters	2		2 75	10		22		2 00	10		26		2 25	10
Carpenters	1		2 50	10		20		1 60	10		5		1 25	10
Carpenters	88		1 80	10		4		1 50	10					
Clerks	25		2 00	10			5	60	10		24		3 00	10
Clerks	6		2 60	10		2		1 50	10					
Cabinet makers	10		2 25	10										
Core makers	3		1 40	10		20		1 25	10		1		1 50	10
Compositors	2		2 75	9		16		*1	9			1	1 50	8½
Door makers	32		1 50	10										
Decorators	4		1 50	10		4		5 ⁿ	10					
Engineers	1		1 50	10		1		2 00	10		2		1 40	10
Engineers	1		1 75	10		1		2 50	10					
Foremen	3		3 20	10		2		2 25	10		2		1 80	10
Foremen	1		2 00	10		1		2 50	10					
File cutters	3		2 00	10		2		1 50	10		12		2 50	8½
Firemen	22		2 04	10										
Fire-proof workers	58		1 75	10										
Foundrymen	23		2 50	10										
Finishers	5		1 45	10		51		95	10		2		2 00	10
Gummer	1		2 00	10										
Grinders	6		1 75	10		8		2 00	10		10		2 50	10
Grinders	8		2 25	10		3		1 50	10					
Helpers	20		1 60	10		3		1 75	10		2		2 00	10
Helpers	61		1 50	10		5		1 00	10		5		1 25	10
Hammermen	21		3 08	10										
Iron workers	4		1 50	10										
Kiln burners	5		2 00	10										
Laborers	40		1 40	10		129		1 50	9		39		1 25	9½
Laborers	23		1 30	10		55		1 35	10		27		1 55	10
Laborers	5		1 15	10		60		1 75	10					
Leadmen	25		2 55	10										
Moulders	28		1 15	10		7		3 00	9½		23		2 03	10
Moulders	65		2 50	9		6		2 56	10					
Mould makers	7		2 00	10										
Mould cleaners		15	50	10										
Machine hands	48		1 60	10		27		1 80	10					
Melters	29		2 32	10										
Machinists	2		2 75	10		40		2 50	10		208		3 00	9
Machinists	31		2 00	10		10		1 60	10		22		2 25	10
Machinists	63		1 75	10										
Platers	1		2 25	10		6		2 00	10					
Pressmen	9		1 50	10		55		3 00	10					
Paper folders		3	*2	10										
Plow fitters	4		2 00	10		6		2 50	10		22		2 25	10
Photographers	1		1 65	10										
Pattern makers	1		2 25	10		3		1 94	10		5		2 50	10
Polishers	3		1 75	19		3		60	10		4		1 50	10
Polishers	6		2 50	10		4		2 00	10					
Packers		10	50	10		14		1 50	10		5		1 00	10
Packers		3	1 80	10										
Painters	25		1 60	10		54		2 19	10		3		1 50	10
Painters	10		2 25	10		6		2 00	10		26		1 75	10
Painters	43		1 60	9		2		1 00	10					

*1 30 cents per 1,000 ems.

*2 75 cents per 1,000.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Canton—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women			Men.	Women.			Men.	Women.		
Rollers	43		\$1 84	10								
Safe builders	70		2 50	10								
Stockers	16		2 25	10								
Saw makers	2		2 00	10								
Stockers	10		2 25	10								
Shippers	7		1 50	10								
Superintendents	2		2 00	10								
Tinners	6		1 50	10	4		\$1 65	9	8		\$2 10	10
Trimmers	3		3 00	10								
Turners	5		3 00	10								
Teamsters	2		2 75	10	3		2 00	9	1		1 50	10
Upholsterer	1		3 00	10								
Vouch makers	35		1 65	10								
Woodworkers	10		1 50	10	8		1 40	9½	35		1 80	10
Woodworkers	7		1 75	10								
Watchmen	1		2 00	10								
Wheelwrights	2		2 00	10								
Yardmen	23		1 33	10								

Total number of men employed, 2,648. Total number of women employed, 37.

Minerva.

Apprentice	1		33	10								
Book-keeper	1		2 00	10								
Blacksmiths	10		1 50	10	4		2 00	10				
Bricklayers	4		2 50	10								
Clerks in stores	16		1 25	10		10	75	10				
Cabinet makers	4		1 40	10								
Carpenters	4		1 50	10	40		1 40	10	8		2 00	10
Carriers	9		50	10								
Dressmakers		7	60	10								
Engineers	2		1 50	10	1		1 00	10	1		1 35	10
Editor	1		4 00	10								
Foremen	1		3 33	10	2		1 00	10				
Gatherers	7		1 00	10								
Green blowers	14		5 00	10								
Hod carriers	1		1 50	10								
Laborers	15		1 25	10	1		1 00	10	1		50	10
Laborers	43		1 20	10								
Layers	3		84	10								
Millers	2		2 00	10								
Milk collectors	1		1 00	10								
Machinemen	16		1 85	10								
Machinists	5		1 60	10								
Moulders	10		2 50	10								
Plumbers	4		2 00	10								
Plasterer	1		2 25	10								
Painters	8		1 38	10	6		2 00	10				
Packers	2		1 50	10	1		1 25	10	1		4 00	10
Shipping clerk	1		1 50	10								
Stone masons	4		2 75	10								
Tailors	7		60	10								
Teaser	1		1 50	10								

Total number of men employed, 264. Total number of women employed, 17.

Akron, Summit County.

Brewers	7		2 00	10								
Boiler makers	12		2 25	10								
Blacksmiths	58		3 00	8	7		2 40	10	4		2 50	10
Blacksmiths	16		3 25	10	3		2 25	10	3		2 00	10
Binders	26		3 00	8	5		2 30	10		9	1 00	10
Binders	14		1 50	10		35	80	10				
Brick masons	1		2 50	10	18		1 50	10				
Belt makers	8		2 00	10								

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Akron—Concluded.

Occupation.	No. employed.		Wages per day.	Hours of labor daily.	No. employed.		Wages per day.	Hours of labor daily.	No. employed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Book-keepers	1	.....	4 00	10	2	.....	2 00	10	3	.....	3 00	8
Book-keepers	1	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Counting-room hands	3	2	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Cracker bakers	7	.....	1 50	10	.....	4	60	10	.....	.....	.....	.....
Cutters (bar-room)	68	.....	3 00	8	.....	.....	.....	.....	.....	.....	.....	.....
Catchers	2	.....	2 50	7	.....	.....	.....	.....	.....	.....	.....	.....
Cabinet makers	6	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Coopers	3	.....	1 25	10	4	.....	1 40	10	10	.....	1 50	10
Coopers	2	.....	1 60	10	6	.....	1 75	10	6	.....	2 00	10
Coopers	1	.....	2 25	10	6	.....	2 50	10	13	.....	1 35	8
Carpenters	22	.....	2 00	10	33	.....	2 25	10	2	.....	2 50	10
Compositors	15	4	2 16	9½	.....	.....	.....	.....	.....	.....	.....	.....
Curriers	4	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Clerks .....	.....	52	1 00	7	2	.....	2 90	8	2	.....	1 34	10
Clerks	100	.....	1 60	10	5	.....	2 75	10	20	.....	2 00	10
Clerks	2	.....	3 50	10	7	.....	1 00	10	13	.....	1 50	10
Clay grinders	5	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Draughtsmen	3	.....	3 33	9	.....	.....	.....	.....	.....	.....	.....	.....
Engineers	1	.....	1 67	10	6	.....	1 75	10	26	.....	2 00	10
Engineers	2	.....	2 50	11	.....	.....	.....	.....	.....	.....	.....	.....
Enamellers	18	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Firemen	2	.....	1 50	10	2	.....	2 50	10	.....	.....	.....	.....
Foremen	4	.....	4 50	10	5	.....	3 00	10	.....	.....	.....	.....
Flour sack makers	13	.....	1 87	12	.....	14	85	7	.....	.....	.....	.....
Finishers	2	.....	2 00	10	91	.....	3 00	8	.....	.....	.....	.....
Hotlers	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Hemp drawers	21	.....	1 40	10	3	.....	1 50	10	.....	.....	.....	.....
Hammersmen	2	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Helpers	41	.....	1 50	10	100	.....	1 40	8	1	.....	1 10	10
Helpers	7	.....	1 25	10	3	.....	1 58	10	1	.....	84	10
Helpers .....	.....	35	1 05	10	2	.....	75	10	10	.....	1 00	10
Helpers	40	.....	1 40	10	26	.....	1 60	8	37	.....	1 75	10
Helpers	8	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Heaters	8	.....	2 00	8	6	.....	5 00	8	.....	.....	.....	.....
Heaters' helpers	15	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Hemp scratchers	4	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Hookers	4	.....	1 50	7	1	.....	1 75	7	.....	.....	.....	.....
Job hands	6	.....	2 30	10	.....	.....	.....	.....	.....	.....	.....	.....
Jollyers	6	.....	1 60	10	2	.....	2 00	8	1	.....	1 25	8
Junction makers	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Kiln burners	6	.....	2 25	10	10	.....	2 00	11	8	.....	1 75	12
Kiln saters	2	.....	2 00	8	7	.....	1 85	8	2	.....	2 00	8
Kiln drawers	4	.....	1 50	8	.....	.....	.....	.....	.....	.....	.....	.....
Lithographers	5	.....	1 50	8	5	.....	6 50	10	.....	.....	.....	.....
Lathemen	11	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Labelers .....	.....	3	84	10	.....	.....	.....	.....	.....	.....	.....	.....
Laborers	10	.....	1 37	10	17	.....	75	10	185	.....	1 30	10
Laborers	19	.....	1 50	10	9	.....	1 75	10	89	.....	1 25	10
Laborers	30	.....	1 60	10	34	.....	1 35	10	163	.....	1 40	10
Laborers	37	.....	1 45	10	19	.....	1 14	10	7	.....	84	10
Machine tenders	2	.....	1 70	12	.....	.....	.....	.....	.....	.....	.....	.....
Machinists	16	.....	1 35	10	13	.....	2 25	10	39	.....	2 35	10
Machinists	84	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Moulders	138	.....	3 00	8	19	.....	2 30	10	36	.....	3 25	10
Moulders	41	.....	2 63	10	.....	.....	.....	.....	.....	.....	.....	.....
Muck rollers	2	.....	5 00	7	.....	.....	.....	.....	.....	.....	.....	.....
Paper makers	8	.....	1 70	12	.....	.....	.....	.....	.....	.....	.....	.....
Plasterers	37	.....	3 00	9	.....	.....	.....	.....	.....	.....	.....	.....
Pattern makers	29	.....	3 00	10	5	.....	2 30	10	11	.....	2 12	10
Puddlers	40	.....	3 25	8	3	.....	2 00	10	.....	.....	.....	.....
Puddlers' helpers	40	.....	1 70	8	.....	.....	.....	.....	.....	.....	.....	.....
Painters	68	.....	3 00	8	25	.....	2 25	10	7	.....	2 10	10
Painters	1	.....	2 00	8	.....	.....	.....	.....	.....	.....	.....	.....
Packers	3	.....	1 40	8	.....	.....	.....	.....	.....	.....	.....	.....
Polishers	6	.....	2 00	8	.....	.....	.....	.....	.....	.....	.....	.....
Platers	2	.....	1 00	8	.....	.....	.....	.....	.....	.....	.....	.....
Pressmen	9	.....	1 67	8	35	.....	2 00	10	26	.....	1 50	10

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Akron—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Pressmen	1		\$2 50	8		5	\$1 00	10				
Potters.....	40		1 45	8								
Pillow sham makers.....	3		1 67	8								
Planing-mill men.....	47		2 00	8	12		1 50	10				
Roughing up men.....	2		2 50	7								
Roll turner.....	1		6 00	10								
Roofing tile works.....	53		1 25	10								
Rollers	4		6 00	7								
Rollers' helpers.....	12		1 75	7								
Roughers	4		2 50	10								
Rope makers.....	11		1 50	10								
Rubber workers.....	175		1 40	10	170		1 00	10				
Salesmen	3		3 00	10								
Stove mounters	10		2 30	10								
Seamster.....	1		1 50	12								
Slippers.....	2		2 00	10								
Straighteners.....	4		2 25	7	1		2 00	10				
Stockers	5		1 45	7								
Shearmen	3		3 00	10								
Setting up hands.....	23		3 00	8								
Shipping clerks.....	35		2 00	8	4		1 50	10				
Shirt makers.....		16	45	10								
Salesmen	2		2 50	10								
Teamsters	15		4 00	10	4		1 40	10	4		\$3 00	10
Teamsters.....	5		1 50	10	1		1 60	10	6		1 75	10
Turners.....	20		3 00	8	10		1 80	10	6		2 00	8
Turners.....	6		2 25	8								
Twine ballers		20	84	10	5		1 40	10		9	85	10
Trimmers.....	5		2 10	10	3		1 50	9				
Type setters.....	17		1 50	10		3	*					
Traveling man.....	1		2 25	10								
Varnish makers.....	4		2 50	10								
Watchmen	4		1 50	10								
Woodworkers.....	3		1 75	10	78		3 00	8	35		2 50	10
Woodworkers.....	6		2 05	10	8		1 25	10	34		2 16	10
Wood engravers.....	10		3 50	8								
Weighmen.....	4		1 75	7								
Yard men.....	13		1 40	10								

Total number of men employed, 3,279. Total number of women employed, 381.

* 25 cents per thousand.

Warren, Trumbull County.

Bricklayers	14		3 50	10								
Brick makers.....	11		1 75	10								
Blacksmiths	4		2 25	10	22		1 75	10	1		2 00	10
Book-keepers	1		3 50	10	1		4 00	10	1		1 50	10
Cooper.....	1		1 75	10								
Compositors	14		2 00*	10		7	1 00	10				
Core maker.....	1		1 40	10								
Cabinet makers.....	8		2 00	10								
Carpenters.....	29		2 10	10	3		1 50	10				
Carder	1		75	10								
Clerks in stores.....	63		1 60	10		14	75	10				
Dressmakers		8	1 00	10								
Draughtsman.....	1		4 00	10								
Engineers.....	1		1 50	10	1		1 25	10	2		1 75	10
Editors.....	2		3 00	10								
Foremen.....	2		2 75	10								
Hod carriers.....	21		1 50	10								
Helper.....	1		1 40	10								
Laborers.....	19		1 30	10	10		1 40	10	1		1 00	10

* 25 cents per thousand.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Warren—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Laborers.....	8	.....	\$ 75	10	5	.....	\$1 25	10	5	...	\$1 50	10
Laborers.....	2	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Machinists.....	12	.....	2 25	10	9	.....	2 00	10	.....	.....	.....	.....
Moulders.....	3	.....	2 00	10	6	.....	2 50	10	13	.....	2 25	10
Machine hands.....	5	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Millers.....	3	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Manager.....	1	.....	5 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Plumbers.....	16	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Plasterers.....	9	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Pit fillers.....	1	.....	2 50	10	1	.....	2 00	10	.....	.....	.....	.....
Pattern makers.....	2	.....	2 50	10	4	.....	2 30	10	2	.....	2 00	10
Paint makers.....	20	.....	1 75	10	.....	5	50	10	.....	.....	.....	.....
Painters.....	6	.....	2 00	10	12	.....	1 75	10	3	.....	2 25	10
Pressmen.....	10	.....	1 70	10	.....	.....	.....	.....	.....	.....	.....	.....
Packers.....	2	.....	75	10	.....	.....	.....	.....	.....	.....	.....	.....
Stone masons.....	23	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Spinner.....	1	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
S ove mounters.....	10	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Trimmers.....	2	.....	2 25	10	2	.....	2 00	10	.....	.....	.....	.....
Teamsters.....	1	.....	1 50	10	1	.....	1 75	10	.....	.....	.....	.....
Tailors.....	28	.....	3 00	10	.....	13	1 00	10	.....	.....	.....	.....
Weavers.....	2	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Wheelers.....	4	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Woodworkers.....	2	.....	2 25	10	3	.....	1 75	10	.....	.....	.....	.....
Watchman.....	1	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 471. Total number of women employed, 47.

Niles.

Blacksmiths.....	4	.....	2 50	10	1	.....	2 00	10	4	.....	1 75	10
Blacksmiths.....	1	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Bottom filers.....	12	.....	1 40	10	.....	.....	.....	.....	.....	.....	.....	.....
Boiler makers.....	10	.....	2 40	10	.....	.....	.....	.....	.....	.....	.....	.....
Book-keepers.....	1	.....	1 50	10	1	.....	3 00	10	.....	.....	.....	.....
Bricklayers.....	1	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Cinder men.....	6	.....	1 40	10	.....	.....	.....	.....	.....	.....	.....	.....
Clerks.....	10	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Car worker.....	1	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Crimpers.....	2	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Carpenters.....	2	.....	2 20	10	.....	.....	.....	.....	.....	.....	.....	.....
Cupola tender.....	1	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Engineers.....	8	.....	2 00	10	2	.....	2 25	10	1	.....	1 35	10
Firemen.....	13	.....	1 35	10	1	.....	2 00	10	2	.....	1 60	10
Firemen.....	2	.....	1 20	10	.....	.....	.....	.....	.....	.....	.....	.....
Feeders.....	88	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Foremen.....	6	.....	4 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Heaters.....	20	.....	3 80	10	4	.....	2 50	10	.....	.....	.....	.....
Heaters' helpers.....	8	.....	2 60	10	4	.....	1 90	10	.....	.....	.....	.....
Helpers.....	4	.....	1 25	10	8	.....	1 50	10	4	.....	1 40	10
Helpers.....	1	.....	1 35	10	.....	.....	.....	.....	.....	.....	.....	.....
Iron breakers.....	3	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Iron carriers.....	3	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Keepers.....	2	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Laboreis.....	194	.....	1 50	10	20	.....	1 35	10	3	.....	1 30	10
Laborers.....	20	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Muck roller.....	1	.....	*	10	.....	.....	.....	.....	.....	.....	.....	.....
Moulders.....	5	.....	2 00	10	1	.....	2 25	10	.....	.....	.....	.....
Millwrights.....	8	.....	1 62	10	.....	.....	.....	.....	.....	.....	.....	.....
Nailers.....	29	.....	6 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Off-bearers.....	5	.....	85	10	.....	.....	.....	.....	.....	.....	.....	.....
Pattern makers.....	2	.....	2 12½	10	.....	.....	.....	.....	.....	.....	.....	.....
Painte s.....	3	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Presser.....	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Pan man.....	1	.....	1 60	10	.....	.....	.....	.....	.....	.....	.....	.....

* 68 cents per ton.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Niles—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Puddlers	48	.....	\$3 75	8	32	.....	\$4 00	10	.....	.....	.....	.....
Puddlers' helpers	48	.....	1 75	8	32	.....	1 83	10	.....	.....	.....	.....
Packers	12	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Roll hands.....	70	.....	2 00	10	15	.....	1 90	10	.....	.....	.....	.....
Rollers.....	10	.....	7 00	8	2	.....	6 00	10	.....	.....	.....	.....
Stock breakers.....	8	.....	1 35	10	.....	.....	.....	.....	.....	.....	.....	.....
Shearmen.....	11	.....	5 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Setter.....	1	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Superintendent	1	.....	5 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Tenders.....	8	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Top fillers.....	4	.....	1 45	10	.....	.....	.....	.....	.....	.....	.....	.....
Wheelers.....	2	.....	1 40	10	.....	.....	.....	.....	.....	.....	.....	.....
Weighers	2	.....	1 40	10	.....	.....	.....	.....	.....	.....	.....	.....
Watchmen.....	6	.....	1 35	10	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 846.

Girard, Trumbull County.

Bricklayers	2	.....	3 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Blacksmiths	3	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Bottom fillers.....	16	.....	1 65	10	.....	.....	.....	.....	.....	.....	.....	.....
Cupola tenders	2	.....	1 45	10	.....	.....	.....	.....	.....	.....	.....	.....
Cinder men.....	6	.....	1 65	10	.....	.....	.....	.....	.....	.....	.....	.....
Carpenters.....	3	.....	2 25	10	1	.....	2 50	10	.....	.....	.....	.....
Clerks.....	2	.....	1 75	10	5	.....	2 00	10	.....	.....	.....	.....
Clerks in stores	23	.....	1 35	10	.....	2	77	10	.....	.....	.....	.....
Dressmakers.....	.....	13	75	10	.....	.....	.....	.....	.....	.....	.....	.....
Engineers.....	1	.....	1 50	10	2	.....	2 25	10	6	.....	\$1 75	10
Foremen	7	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Foundryman	1	.....	3 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Firemen	2	.....	1 65	10	.....	.....	.....	.....	.....	.....	.....	.....
Heaters	6	.....	10 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Helpers	6	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Keepers.....	2	.....	1 90	10	.....	.....	.....	.....	.....	.....	.....	.....
Laborers.....	110	.....	1 25	10	45	.....	1 30	10	.....	.....	.....	.....
Metal carriers.....	6	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Millwright	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Machinists.....	1	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Moulders	6	.....	2 50	10	8	.....	1 65	10	.....	.....	.....	.....
Night watchman	1	.....	3 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Ore breakers.....	8	.....	1 40	10	.....	.....	.....	.....	.....	.....	.....	.....
Pattern makers.....	1	.....	1 65	10	.....	.....	.....	.....	.....	.....	.....	.....
Puddlers.....	92	.....	4 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Puddlers' helpers.....	92	.....	2 15	10	.....	.....	.....	.....	.....	.....	.....	.....
Plasterer.....	1	.....	2 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Roughers	12	.....	5 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Rollers.....	8	.....	14 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Stove mounter.....	1	.....	1 87	10	.....	.....	.....	.....	.....	.....	.....	.....
Stone breakers	4	.....	1 40	10	.....	.....	.....	.....	.....	.....	.....	.....
Shearmen.....	20	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Stone mason.....	1	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Tanners.....	40	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Top fillers.....	4	.....	1 85	10	.....	.....	.....	.....	.....	.....	.....	.....
Teamsters.....	2	.....	1 40	10	.....	.....	.....	.....	.....	.....	.....	.....
Weighmen.....	2	.....	1 65	10	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 562. Total number of women employed, 15.

Canal Dover, Tuscarawas County.

Apprentices	4	.....	1 05	12	.....	.....	.....	.....	.....	.....	.....	.....
Burner.....	1	.....	1 35	10	.....	.....	.....	.....	.....	.....	.....	.....
Carvers.....	9	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Cabinet makers.....	9	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Cinder men.....	6	.....	1 40	10	.....	.....	.....	.....	.....	.....	.....	.....
Clerks.....	2	.....	3 28	10	.....	.....	.....	.....	.....	.....	.....	.....
Engineers.....	2	.....	2 00	10	1	.....	1 75	10	2	.....	2 08	10

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Canal Dover—Concluded.

Occupation.	No. employed.		Wages per day.	Hours of labor daily.	No. employed.		Wages per day.	Hours of labor daily.	No. employed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Foremen.....	1		\$3 25	10								
Finishers.....	10		1 75	10								
Fillers.....	12		1 40	10								
Firemen.....	2		1 40	10	1		\$2 08	10				
Helpers.....	2		1 50	10								
Hot blast men.....	2		1 40	10								
Keep rs.....	2		1 75	10								
Lime breakers.....	2		1 40	10								
Laborers.....	12		1 25	10	10		1 15	10	3		\$1 38	10
Laborers.....	5		1 66	10								
Moulders.....	3		1 25	10								
Millers.....	4		2 08	10								
Ore breakers.....	2		1 30	10								
Off-bearers.....	2		1 75	10								
Packers.....	9		1 75	10								
Pansman.....	1		1 80	10								
Screeners.....	4		1 40	10								
Setter.....	1		1 80	10								
Salesman.....	1		4 16	10								
Trimmers.....	9		1 75	10								
Top fillers.....	2		1 50	10								
Temperer.....	1		1 02	10								
Teamsters.....	2		1 66	10								
Woodworkers.....	9		1 75	10								
Wheelers.....	3		1 50	10	2		1 38	10	1		1 00	10
Watchmen.....	1		1 35	10								

Total number of men employed, 157.

Dennison.

Apprentices.....	2		1 00	10	1		1 10	10				
Blacksmiths.....	31		2 11	10								
Bricklayers.....	2		2 25	10								
Boiler makers.....	22		2 31	10								
Car builders.....	34		1 75	10	41		1 40	10				
Car inspectors.....	4		1 25	10	12		1 50	10				
Carpenters.....	23		1 79	10								
Clerks.....	4		1 45	10	10		2 35	10		2	1 25	10
Coppersmith.....	1		2 40	10								
Draughtsman.....	1		2 00	10								
Engine inspectors.....	1		3 00	10								
Engine cleaners.....	32		1 09	10								
Engine repairers.....	4		1 52	10								
Engineers.....	4		1 87	10	9		1 60	10	1		2 50	10
Foremen.....	9		3 06	10	13		2 95	10				
Grinders.....	3		2 07	10								
Hostlers.....	10		1 77	10								
Helpers.....	45		1 29	10	43		1 24	10	46		1 31	10
Helpers.....	4		1 45	10								
Laborers.....	100		1 20	10								
Millers.....	2		2 75	10								
Master mechanics.....	2		6 43	10								
Machinists.....	98		2 22	10								
Messengers.....	4		1 17	10	1		1 58	10		1	1 00	10
Moulders.....	1		2 40	10								
Painters.....	18		1 58	10								
Pattern makers.....	2		2 25	10								
Plumbers.....	8		1 82	10								
Rigger.....	1		1 85	10								
Teamsters.....	4		1 20	10								
Trimmer.....	1		1 75	10								
Tinners.....	11		2 24	10								
Upholsterers.....	1		2 50	10								
Watchmen.....	4		1 26	10								

Total number of men employed, 670. Total number of women employed, 3.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Newcomertown.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Compositors	3	.....	\$1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Carpenters.....	4	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Editor	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Engineer	1	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 9.

Uhrichsville.

Book-keeper	1	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Brick makers	3	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Burners.....	4	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Backsm ths	8	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Carpenters.....	7	.....	1 50	10	3	.....	\$2 00	10	1	.....	\$1 75	10
Clerks in stores	4	.....	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Dressmakers.....	.....	5	50	10	.....	.....	.....	.....	.....	.....	.....	.....
Engineers	1	.....	1 00	10	1	.....	1 35	10	1	.....	1 80	10
Engineers	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Foremen.....	1	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Finishers	2	.....	1 62	10	.....	.....	.....	.....	.....	.....	.....	.....
Kiln setters.....	22	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Laborers.....	1	.....	75	10	27	.....	1 25	10	3	.....	50	10
Machine men	2	.....	2 00	10	1	.....	1 50	10	.....	.....	.....	.....
Moulders	3	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Miners	10	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Pressmen	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Painters ..	2	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Stone masons.....	3	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Tailors.....	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 109. Total number of women employed, 5.

Marysville, Union County.

Bricklayers	5	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Broom inakers.....	2	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Brewer	1	.....	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Book-keepers	4	.....	1 00	10	1	.....	2 50	10	1	.....	1 66	10
Book-keepers	1	.....	1 50	10	1	.....	2 00	10	.....	.....	.....	.....
Blacksmiths	11	.....	2 50	10	2	.....	1 75	10	4	.....	2 00	10
Blacksmiths	2	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Cabinet makers.....	2	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Carpenters.....	2	.....	1 75	10	4	.....	1 80	10	2	.....	1 00	10
Carpenters.....	10	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Compositors	4	1	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Clerks in stores.....	87	13	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Dressmakers.....	.....	20	75	10	.....	.....	.....	.....	.....	.....	.....	.....
Eugineers.....	3	.....	1 50	10	1	.....	1 00	10	2	.....	1 25	10
Foremen.....	1	.....	2 00	10	2	.....	1 66	10	1	.....	1 75	10
Hod carriers.....	6	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Laborers.....	2	.....	2 00	10	15	.....	1 25	10	16	.....	1 00	10
Laborers.....	6	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Lathers.....	6	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Painters	2	.....	1 50	10	1	.....	1 80	10	13	.....	2 00	10
Polishers	2	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Plasterers	7	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Salesmen	2	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Sawyrs	2	.....	1 50	10	3	.....	1 25	10	.....	.....	.....	.....
Stone cutters	6	.....	2 00	10	5	.....	2 25	10	.....	.....	.....	.....
Trimmers	3	.....	2 50	10	2	.....	3 00	10	.....	.....	.....	.....
Tinners.....	4	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Teamster	1	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Tile makers	2	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Tailors	8	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Wood workers.....	2	.....	2 00	10	2	.....	1 80	10	.....	.....	.....	.....

Total number of men employed, 273. Total number of women employed, 34.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Milford.												
Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Bricklayers	2	.....	\$1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Blacksmiths	1	.....	1 66	10	.....	.....	.....	.....	.....	.....	.....	.....
Carpenters	9	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Clerks in stores	23	.....	75	10	.....	1	\$ 50	10	.....	.....	.....	.....
Dressmakers .....	.....	1	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Engineer	1	.....	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Foremen	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Helper	1	.....	1 33	10	.....	.....	.....	.....	.....	.....	.....	.....
Hod carrier	1	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Laborers	4	.....	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Millers	2	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Painters	1	.....	2 00	10	4	.....	1 75	10	.....	.....	.....	.....
Plasterers	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Stone masons	2	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Tailors	2	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Woodworkers.....	5	.....	1 50	10	2	.....	1 66	10	.....	.....	.....	.....
Total number of men employed, 62. Total number of women employed, 2.												

Plain City.											
Bricklayers	3		3 00	10							
Blacksmiths	3		2 00	10	5		1 50	10			
Beatermen	2		1 50	10							
Cabinet makers	4		2 50	10							
Carpenters	12		2 50	10							
Clerks in stores	23		1 00	10		3	50	10			
Compositors	2		1 00	10							
Dressmakers		10	75	10							
Engineers	2		1 50	10	1		2 60	10	1		\$1 25 10
Editor	1		2 50	10							
Foreman	1		2 50	10							
Finishers	3		1 35	10	1		1 25	10	2		75 10
Hod carriers	2		1 25	10							
Helper	1		1 00	10							
Laborers	27		1 25	10	1		1 00	10			
Machine tenders	2		2 00	10	12		1 00	10			
Millers	1		2 60	10							
Painter	4		2 00	10	6		2 50	10			
Packer	1		1 00	10							
Plasterers	2		2 50	10							
Stone masons	2		2 50	10							
Sail sman	1		1 50	10							
Trimmer	1		2 00	10							
Teamster	1		1 00	10							
Tailors	2		2 00	10							
Woodworker	1		2 00	10							
Total number of men employed, 133. Total number of women employed, 13.											

Van Wert, Van Wert County.											
Apprentices	3		1 00	10	3		75	10	3		50 10
Bricklayers	8		2 25	10							
Brick moulders	2		1 75	10							
Boiler makers	2		2 75	10							
Blacksmiths	13		2 25	10	4		2 00	10			
Car builders	2		2 75	10							
Compositor	3		2 00	10	3		1 75	10			
Carpenters	15		2 00	10							
Car inspectors	11		1 60	10							
Car cleaners	1		1 00	10							
Clerks in stores	67		1 25	10		15	75	10			
Dressmakers		15	75	10							
Editors	2		2 50	10							
Engineers	20		3 00	10	1		1 60	10	2		1 50 10

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Van Wert—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Engineers	1	.....	\$1 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Foundry men.....	2	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Foundrymen.....	1	.....	1 75	10	2	.....	\$2 00	10	3	.....	\$2 75	10
Firemen	2	.....	1 35	10	20	.....	1 80	10	2	.....	1 25	10
Hod carriers.....	10	.....	1 56	10	.....	.....	.....	.....	.....	.....	.....	.....
Helpers	2	.....	1 50	10	3	.....	1 25	10	2	.....	2 25	10
Jointer.....	1	.....	2 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Laborers.....	11	.....	1 75	10	45	.....	1 25	10	2	.....	1 00	10
Laborers.....	17	.....	1 35	10	67	.....	1 15	10	8	.....	75	10
Laborers.....	10	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Machinists.....	4	.....	2 50	10	5	.....	2 25	10	.....	.....	.....	.....
Master mechanic	1	.....	4 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Managers	1	.....	2 50	10	2	.....	2 00	10	.....	.....	.....	.....
Millers.....	5	.....	2 00	10	2	.....	2 50	10	.....	.....	.....	.....
Mill men	3	.....	1 35	10	.....	.....	.....	.....	.....	.....	.....	.....
Off-bearers.....	2	.....	1 25	10	1	.....	1 00	10	.....	.....	.....	.....
Office help.....	1	.....	4 00	10	1	.....	1 75	10	1	.....	1 50	10
Planers	1	.....	1 55	10	1	.....	1 50	10	.....	.....	.....	.....
Plumbers	3	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Plasterers.....	10	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Pattern maker.....	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Pumpers.....	5	.....	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Painters	17	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Riveters	8	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Stone masons.....	9	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Skilled men.....	3	.....	3 00	10	3	.....	2 50	10	4	.....	2 00	10
Skilled men.....	3	.....	1 75	10	1	.....	2 75	10	.....	.....	.....	.....
Superintendent.....	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Sawyers.....	3	.....	1 40	10	1	.....	2 00	10	.....	.....	.....	.....
Turners	2	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Teamsters	1	.....	50	10	1	.....	1 00	10	1	.....	1 40	10
Teamsters	1	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Tile makers.....	4	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Trimmers	3	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Tailors	13	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Wipers.....	2	.....	1 35	10	.....	.....	.....	.....	.....	.....	.....	.....
Watchmen.....	13	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Woodworkers.....	2	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 522. Total number of women employed, 30.

Harmar, Washington County.

Apprentices	4	.....	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Blacksmiths	1	.....	2 00	10	2	.....	2 50	10	.....	.....	.....	.....
Boiler makers.....	2	.....	2 00	10	2	.....	1 75	10	.....	.....	.....	.....
Clerks in stores.....	2	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Cleaners	2	.....	1 17	10	.....	.....	.....	.....	.....	.....	.....	.....
Cupola tenders	2	.....	1 45	10	.....	.....	.....	.....	.....	.....	.....	.....
Engineers.....	1	.....	1 25	10	1	.....	1 34	10	.....	.....	.....	.....
Helpers	1	.....	50	10	2	.....	1 16	10	1	.....	1 25	10
Laborers.....	4	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Manager	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Mounters	2	.....	1 34	10	.....	.....	.....	.....	.....	.....	.....	.....
Miller	1	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Moulders	2	.....	2 00	10	10	.....	2 50	10	.....	.....	.....	.....
Machinists.....	4	.....	2 00	10	5	.....	2 25	10	.....	.....	.....	.....
Plow grinder	1	.....	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Packer	1	.....	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Pattern makers	2	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Teamster	1	.....	1 34	10	.....	.....	.....	.....	.....	.....	.....	.....
Wood workers.....	3	.....	1 75	10	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 60. Total number of women employed, 0.

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Wooster—Continued.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Engineers ..	9		\$1 50	10								
Editors.....	4		3 00	10								
Helpers	14	8	1 80	10	6		\$1 25	10	4		\$1 30	10
Harness makers.....	18		1 70	10								
Laborers.....	3		1 25	10								
Millers.....	15		1 50	10								
Machinists.....	4		2 00	10								
Moulders	7		1 60	10								
Milliners		15	80	10								
Plumbers	3		2 30	10								
Pad makers		4	75	10								
Packers	2		2 00	10	5		1 25	10				
Street laborers.....	100		1 30	10								
Stone masons	13		2 75	10								
Tailors.....	5		2 00	10								
Whip stockers	14		2 30	10								
Whip braiders		7	90	10								
Whip finishers	11		2 00	10								

Total number of men employed, 382. Total number of women employed, 91.

Bryan, Williams County.

Bricklayers	6		2 00	10								
Button makers.....	1		1 75	10								
Book-keeper		1	84	10								
Blader	1		2 50	10								
Brewer.....	1		2 50	12								
Blacksmiths	1		1 75	10	2		2 00	10				
Carpenters.....	2		1 50	10								
Can washer		1	50	10								
Cheese makers.....	1		1 75	10								
Cigarmakers	4		1 75	8								
Finishers	2		1 75	10	1		1 50	10	1		2 25	10
Foremen	2		2 50	10								
Fireman	1		1 50	10								
Engineers.....	3		2 00	10								
Grinders.....	2		1 75	10								
Helper	1		1 50	10								
Laborers	90		1 25	10	2		1 40	10	6		1 75	12
Managers	1		2 50	10	1		2 50	8	1		2 50	12
Millers.....	1		2 25	10	1		2 25	11				
Machinists.....	6		2 50	10								
Moulders	6		2 50	10								
Machine men.....	5		1 75	10								
Painters	2		1 75	10	6		2 00	10				
Printers.....	6		1 75	10								
Planer	1		1 50	10								
Pattern makers.....	2		2 00	10								
Setter	1		1 50	10								
Slat sawyer	1		1 25	10								
Stripper	1		33	8								
Sawyer	1		2 00	10								
Turner.....	1		1 50	10								
Tyle sawyer.....	1		1 25	10								
Teamsters	3		1 25	10								
Trimmers.....	2		2 00	10								
Woodworkers	1		1 75	10	1		2 00	10				

Total number of men employed, 182. Total number of women employed, 2.

Carey, Wyandot County.

Brick and tile workers	22		1 25	10								
Butchers.....	2		1 25	10								
Bricklayers	8		3 00	10								
Blacksmiths.....	5		2 50	10								

TABLE SHOWING AMOUNT OF WAGES PAID THROUGHOUT THE STATE, ETC.—Continued.

Carey—Concluded.

Occupation.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.	No. em- ployed.		Wages per day.	Hours of labor daily.
	Men.	Women.			Men.	Women.			Men.	Women.		
Chore laborers.....	50	.....	1 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Churn makers.....	9	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Cigar makers.....	3	.....	1 75	10	.....	4	80	10	.....	.....	.....	.....
Carpenters.....	15	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Clerks in stores.....	11	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Dress-makers.....	.....	6	75	10	.....	.....	.....	.....	.....	.....	.....	.....
Foundrymen.....	4	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Hod carriers.....	7	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Lime laborers.....	22	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Millers.....	10	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Plasterers.....	7	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Painters.....	5	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Plumbers.....	5	.....	2 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Street laborers.....	20	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Sash and door men.....	10	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Stone crushers.....	13	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Stone masons.....	8	.....	2 75	10	.....	.....	.....	.....	.....	.....	.....	.....
Teamsters ..	7	.....	3 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Tailors.....	4	.....	1 75	10	.....	5	80	10	.....	.....	.....	.....
Woolen-mill hands.....	2	.....	1 25	10	.....	4	75	10	.....	.....	.....	.....
Wagon makers.....	8	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....

Total number of men employed, 257. Total number of women employed, 19.

Upper Sandusky, Wyandot County.

Compositors.....	20	.....	1 33	10	.....	.....	.....	.....	.....	.....	.....	.....
Carpenters.....	9	.....	2 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Clerks in stores.....	30	.....	1 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Dressmakers.....	.....	15	50	10	.....	.....	.....	.....	.....	.....	.....	.....
Engineer.....	1	.....	1 40	10	.....	.....	.....	.....	.....	.....	.....	.....
Hod carriers.....	12	.....	1 50	10	.....	.....	.....	.....	.....	.....	.....	.....
Laborers.....	17	.....	1 40	10	.....	.....	.....	.....	.....	.....	.....	.....
Machinists.....	10	.....	2 00	10	.....	.....	.....	.....	.....	.....	.....	.....
Millers.....	4	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Papermen.....	40	.....	1 40	10	.....	.....	.....	.....	.....	.....	.....	.....
Plasterers.....	8	.....	2 25	10	.....	.....	.....	.....	.....	.....	.....	.....
Strawmen.....	20	.....	1 40	10	.....	.....	.....	.....	.....	.....	.....	.....
Tailors.....	12	2 00	10

Total number of men employed, 183. Total number of women employed, 15.

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ERRATA.

Wherever in the last paragraph on page 12, ending on page 13, 200,000 occurs it should read 75,000. 200,000 is the estimate of the population supported in foreign countries by the manufacture of iron that finds a market in this country, and not of the number of workingmen directly employed.

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FIFTH ANNUAL REPORT
OF THE
OHIO
Meteorological Bureau,

FOR THE YEAR

BEGINNING JANUARY 1ST, 1887, AND ENDING
DECEMBER 31ST, 1887.

BOARD OF DIRECTORS:

BENJ. F. THOMAS, President, L. N. BONHAM, GEO. H. TWISS.

C. E. KILBOURNE, Secretary.

STATE OF OHIO,
OFFICE OF OHIO METEOROLOGICAL BUREAU,
COLUMBUS, *February 27, 1888.*

To His Excellency, J. B. FORAKER, Governor of Ohio :

SIR: In accordance with the requirements of the law, I have the honor to submit herewith the fifth annual report of the Ohio Meteorological Bureau.

Very respectfully,

Your obedient servant,

BENJ. F. THOMAS, *Director.*

OHIO METEOROLOGICAL BUREAU.

It has been thought desirable to make the Meteorological portion of the annual reports of the Bureau cover the period from January 1 to December 31, in order that our results may be readily compared and combined with those of the Signal Service, and of other meteorological organizations. The change is made in this report.

The summaries for previous years have been reduced, and the resulting means are given in the table headed "Summary by Years."

The financial statement covers the fiscal year of the State, as heretofore.

Mr. E. H. Mark, who filled the position of Secretary of the Bureau so ably, resigned to accept the chair of Physics at the Louisville High School, Louisville, Kentucky, in August. Mr. Charles M. Strong was detailed by the chief signal officer, General A. W. Greely, in July, to aid the Bureau in its work. After Mr. Mark's departure the entire work of the office was performed by Mr. Strong, until November, when Lieutenant Charles E. Kilbourne, detailed as Professor of Military Science at the University, was elected Secretary. Mr. Strong's detail continues.

A list of the stations of the Bureau, with names of observers, particulars as to location, instruments, etc., is given on pages 13-14. Two new stations were established during the year—at Celina, Prof. W. F. McDaniel, observer, and at Akron, Prof. C. S. Howe, observer. Stations at Findlay, Gambier and Warren were discontinued. The observers have discharged their duties most faithfully and efficiently, and have warmly seconded the efforts of the officers of the Bureau to improve the accuracy of observations and reports, and to secure the early appearance of reports each month. The increased force at the central office has made it possible to check all computations, and to add some new features to the work regularly done. One of these, which is giving much satisfaction, is a preparation of a summary of the weather for each month, which is sent to all observers and furnished to the press in advance of the appearance of the printed report.

The distribution of signals on baggage cars on the three sections of the C., H. V. & T. R. R., on the C. & C. M. R. R., and on the C. Mt. V.

& D. R. R., was continued until March 15, when the failure of the deficiency bill in Congress compelled the chief signal officer to stop the telegraphing of predictions.

The system of signals used to indicate the predicted weather was changed by the Signal Service, and the display by cars was not taken up again when the telegraphing of predictions was resumed, the railroads not being willing to make the necessary alterations in the signals at their own expense, and the Bureau having no means for that purpose.

On resuming the telegraphing of predictions in July, the chief signal officer offered to send telegrams daily to a limited number of points in Ohio, to be named by the Bureau. The telegrams were to be sent at government expense, the only condition required being the regular display of the predictions by flags, and a report each month as to time of receipt and display of predictions, and as to verification of predictions. A list of places desiring the telegrams and complying with the conditions will be found on page 15. This service is giving great satisfaction. The Bureau is under great obligation to the chief signal officer, General A. W. Greely, for substantial aid in many ways. He has shown a warm interest in our work, and has contributed much to its success.

During the year a number of applications were made for the establishment of new stations, which were for the present declined, because of lack of funds for the purchase of instruments, and because the work necessary to prepare properly the returns from existing stations was as great as the office could do. It would be well to establish a station at each county seat, but this cannot be done with the sum now annually provided.

A brief summary of the principal features of weather for each month, and also a general review for the year are appended.

BENJ. F. THOMAS, *Director*.

PRINCIPAL FEATURES OF THE WEATHER FOR THE DIFFERENT MONTHS OF THE YEAR.

JANUARY.

The mean atmospheric pressure, 30.050 inches, was .085 inches below the average, and the lowest mean for the month for five years.

The mean temperature, $26^{\circ}.4$, was the highest January mean since the opening of the Bureau, and was $3^{\circ}.1$ above the average. The maximum reading was $74^{\circ}.9$, on the 22d, at McConnelsville, and the minimum was $21^{\circ}.0$ below zero on the 7th, at Paulding.

The mean rainfall was 2.08 inches, 0.57 inches below the normal, and the lowest January record.

FEBRUARY.

The month of February was characterized by sudden and extreme changes in the barometer—the highest and lowest readings for February during the past five years occurring within the month, and the maximum, 30.890 inches, is the highest in any month in that time.

The mean temperature was $5^{\circ}.4$ above the normal, which is taken as $30^{\circ}.5$, and $6^{\circ}.8$ above the mean of the past five years. The maximum temperature was $70^{\circ}.0$ on the 10th, and the minimum $-0^{\circ}.3$, on the 1st.

The mean rainfall, 6.11 inches, was 3.60 inches above the normal.

MARCH.

The mean barometric pressure was 30.053 inches, agreeing with the average. The highest pressure, 30.680 inches, on the 4th, is the highest March record. The temperature for the month was unusually steady. The mean was $35^{\circ}.8$. The monthly range, $69^{\circ}.5$, is smaller by $7^{\circ}.0$ than in any preceding March. The mean temperature was $2^{\circ}.4$ below the normal, but the five-year average for March is $1^{\circ}.0$ lower still.

The mean rainfall, 2.23 inches, was .06 below the five-year average, and 1.14 inches below the normal.

APRIL.

The mean barometric pressure was 30.006 inches, a little lower than the five-year average, which is 30.014. The mean temperature was $49^{\circ}.8$, $0^{\circ}.7$ above the average.

The mean rainfall, 3.83 inches, was 0.9 inches above the average, and 0.24 above the normal.

MAY.

The mean barometric pressure was 29.986 inches, the highest May record of the Bureau. The average for May is 29.955. The mean temperature, 66°.0, is the highest May mean, and is 4°.2 above the average, and 5°.3 above the normal. The highest temperature, 97°.0, is the highest for May. The minimum temperature was 38°.0. On each of the four preceding years covered by our records, the May minimum was 32°.0, or lower. The number of clear days was greater than usual. The mean rainfall was only 2.87 inches. The average for May is 4.13 inches, and the normal 5.85 inches.

JUNE.

The weather for June was remarkable for the high barometric pressure prevailing, and for the high temperature and clear skies. The mean barometric pressure was 29.990 inches, the highest June mean. The five-year average is 29.958. The highest reading, 30.453 inches, and the lowest, 29.620 inches, were both the highest records for June.

The mean temperature was 71°.0. The highest June mean for any preceding year was 67°.5, in 1886, while the five-year average is 63°.3. The June normal for the State is 70°.36.

The maximum temperature was 102°.0, on the 20th, at Pomeroy. This is the highest temperature for June on record in the Bureau.

The minimum temperature, 38°.0, on the 24th, at Paulding, is 4°.0 higher than any preceding June minimum.

The mean rainfall, 3.85 inches, was slightly below the average, which is 4.19 inches.

JULY.

Since the establishment of the Weather Bureau no July has equaled this, either in maximum or mean temperature. The highest temperature reported, 108°0, on the 18th, at Pomeroy, was ten degrees higher than any maximum of any previous July. The mean, 77°.9, exceeded any previous one by 2°.7. The rainfall was also greatly deficient, the average rainfall over the State lacking .90 inches of reaching the normal. The average daily deficiency for the State was .036 inches.

Mr. Thomas Mikesell, of Wauseon, O., reports the mean temperature of the month, at that place, to be 4°.5 above the average for the past seventeen years, and the highest July mean in that time. His monthly precipitation was the lowest within the past 15 years. Mr. F.

Y. Davis, of Lima, O., has furnished a table of mean July temperatures for the past twenty-two years, which shows July, 1887, to have been the warmest within that time.

AUGUST.

This month furnished the greatest extremes in temperature of any August since the opening of the Bureau, the highest being $104^{\circ}.0$ on the 4th and 10th, at Pomeroy, and the lowest $33^{\circ}.0$ on the 29th, at Paulding, giving a range of $71^{\circ}.0$, or $11^{\circ}.0$ greater than any preceding August.

The mean monthly rainfall for the State was 2.39 inches, being 0.74 inches less than the average for the past five years. The mean atmospheric pressure was 29.990 inches, which is .017 below the five-year mean. The first frosts of the season were reported on the 25th, 28th, 29th and 30th, from stations in the northern part of the State.

SEPTEMBER.

The mean barometric pressure, 30.086 inches, was .030 inches above the normal, and the highest September mean on record in the Bureau.

The mean temperature, $63^{\circ}.7$, was $1^{\circ}.1$ below the average.

The mean rainfall, 2.17 inches, was 0.79 inches below the five-year average, 0.55 inches below the normal, and was the lightest so far recorded for the month of September.

Light frosts occurred in the northern portion of the State on the 3d and 7th, and killing frosts occurred generally throughout the State on the 24th and 26th.

OCTOBER.

The mean atmospheric pressure was .029 inches below the mean. The mean temperature was also below the mean, being $3^{\circ}.1$ below the normal for the month, and is the lowest mean for October since the opening of the Bureau.

The mean rainfall for the State was 0.75 inches, which is less than one-third the normal amount.

The first snow of the season was reported from stations in the northern and middle sections on the 21st, and from stations in southern sections on the 30th.

NOVEMBER.

The mean barometric pressure, 30.076 inches, was .026 inches below the mean for the past six years. The mean temperature was $39^{\circ}.3$, which is $0^{\circ}.9$ below the average. The maximum temperature was $75^{\circ}.0$ and the minimum $8^{\circ}.0$ below zero. This is the lowest temperature reported during the month of November, since 1880.

The mean rainfall was 2.81 inches, which is about the average for the month.

DECEMBER.

The mean atmospheric pressure was .016 inches below the average for the past six years. The highest barometer reported, 30.906 inches, at Canton and Hiram, on the 1st, is the highest on record for the month of December, since the opening of the Bureau. The mean temperature was $31^{\circ}.3$, which is $1^{\circ}.0$ above the six-year average. The maximum was $62^{\circ}.0$ at Portsmouth on the 4th, 5th, 6th, and the minimum, $8^{\circ}.0$ below zero on the 30th, at Paulding. The mean monthly rainfall, 2.46 inches, is .60 inches below the average for December.

GENERAL REVIEW FOR THE YEAR.

The mean atmospheric pressure, 30.047 inches, is about normal, being only .006 inches below the average for the past five years. The highest barometer, 30.906 inches, occurred at Canton and Hiram, on the 1st of December, and is the highest on record in the Bureau to that time. The lowest barometer, 29.164 inches, occurred at Napoleon, on February 18th.

The mean temperature, $51^{\circ}.4$, is the highest annual mean since the Bureau was established. The maximum temperature, $108^{\circ}.0$, at Pomeroy, on July 18th, is also the highest temperature on record, and is $7^{\circ}.0$ higher than the maximum for July 21st, 1885, at the Ohio State University. The lowest temperature reported during the year was $21^{\circ}.0$ below zero, at Paulding, on January 7th. The mean daily range, $21^{\circ}.2$, is about $1^{\circ}.0$ above the average. The greatest daily range, $57^{\circ}.0$, occurred at Findlay, on April 11th, and the least, $1^{\circ}.0$, at Logan, on January 15th, and at Wooster, on April 16th. The mean relative humidity was 75.8 per cent., which is 1.1 per cent. below the average. The number of clear days, 113.8, is 3.7 above, and the number of fair days, 127.3, is 2.4 below the average. Rain fell on 120.9 days, which is 17 days below the average. The rainfall, 33.63 inches, is 6.36 inches below the normal for the State. The mean monthly rainfall, 2.80 inches, is .41 inches below the five-year average.

The meteorological year is remarkable for having the highest barometer, the highest temperature, the highest mean temperature, and the smallest rainfall on record, since the opening of the Bureau.

Detailed information concerning the meteorology of the year, will be found in the accompanying summaries.

The following meteorological data are shown by means of charts:

Monthly range of barometer and temperature; total rainfall at each

station and the mean monthly rainfall for the State; the monthly maximum, mean and minimum temperatures and barometer readings for each station and for the State; and the prevailing direction of the wind at each station.

A chart is also given showing the distribution of the rainfall during 1887, by means of a scale of shades.

FINANCIAL STATEMENT, SHOWING RECEIPTS AND EXPENDITURES OF
THE OHIO METEOROLOGICAL BUREAU, FOR THE YEAR
ENDING NOVEMBER 15, 1887.

RECEIPTS.

Date.	From what source.	Amount.
1886.		
Nov. 15	Balance on hand	\$855 55
1887.		
Feb. 18	Appropriation of legislature.....	500 00
March 23	“ “	1,500 00
Feb. 18, '87	Refunded by W. U. Tel. Co., on bill paid for U. S. Signal service (never presented for payment)	26 60
Nov. 15	Orders of January, 1883, G. S. Harter, 70c.; March 27, 1883, J. W. Gray, 75c.....	1 45
	Total available funds for the year	\$2,883 60

EXPENDITURES.

Date.	To whom paid.	For what purpose.	Order No.	Amount.
1886.				
Dec. 2	E. H. Mark	Salary as Secretary to Dec. 1.....	75	\$50 00
“ 15	E. H. Mark	“ “ Dec. 15.....	76	50 00
“ 30	D. W. C. Jones, P. M..	1,000 2-cent wrappers	77	21 00
1887.				
Jan. 4	Cent. Union Tel. Co..	Transmit'g weather signals from 10th to 31st Dec., 1887.....	78	3 00
“ 4	E. H. Mark	Salary as Secretary to Jan. 1, '87..	79	50 00
“ 15	E. H. Mark	“ “ Jan. 15, '87	80	50 00
Feb. 2	L. E. Hitchcock.....	For instrument shelter.....	81	7 35
“ 2	E. H. Mark	Salary as Secretary to Feb. 1.....	82	50 00
“ 4	Cent. Union Tel. Co..	Transmit'g weather sig's for Jan.	83	3 75
“ 18	E. H. Mark	Salary as Secretary to Feb. 15.....	84	23 40
“ 18	E. H. Mark	Received \$26.60, amount refunded by W. U. Telegraph Co., on bill paid for U. S. Sig. service, Aug. 7, '85—part of salary.....		26 60
“ 26	E. H. Mark	Paints, shelters and supplies	85	10 78
March 1	E. H. Mark	Salary as Secretary to Mar. 1, '87	86	50 00
“ 1	D. W. C. Jones, P. M..	2,000 2-cent wrappers	87	42 00
“ 3	State B'd Agriculture	Postal wrappers.....	88	5 00
“ 5	C. U. Tel. Co.....	Transmitting weather reports to five places, 28 days.....	89	2 95
“ 15	E. H. Mark	Salary as Secretary to date	90	50 00
“ 24	B. M. McCabe.....	Changing signals Sept. 13 to Mar. 4.....	91	85 50
April 1	E. H. Mark	Salary as Secretary to date	92	50 00
“ 15	E. H. Mark	“ “ “	93	50 00
“ 21	E. H. Mark	Stationery and supplies to Apr. 1	94	2 18

STATEMENT SHOWING RECEIPTS AND EXPENDITURES OF THE OHIO METEOROLOGICAL BUREAU, ETC.—Concluded.
EXPENDITURES—Concluded.

Date.	To whom paid.	For what purpose.	Order No.	Amount.
1887.				
April 21	E. H. Mark.....	Expressage and expenses	95	\$10 60
" 28	D. W. C. Jones, P. M..	1,000 2-c. wrappers and 100 2-c stamps	96	23 00
May 2	E. H. Mark.....	Salary as Secretary to May 1.....	97	50 00
" 2	E. H. Mark.....	Repairs, telegrams and express'e	98	2 66
" 14	D. W. C. Jones, P. M..	1,000 2-cent wrappers	99	21 00
" 16	E. H. Mark.....	Salary as Secretary to May 15.....	100	50 00
" 31	E. H. Mark.....	Traveling expenses	101	25 00
June 3	E. H. Mark.....	Salary as Secretary to June 1.....	102	50 00
" 9	D. W. C. Jones, P. M..	1,000 2-cent wrappers	103	21 00
" 15	E. H. Mark.....	Salary as Secretary to date.....	104	50 00
July 2	E. H. Mark.....	" " to July 1st.....	105	50 00
" 15	E. H. Mark.....	Supplies to July 1.....	106	2 25
" 15	E. H. Mark.....	Salary as Secretary to date	107	50 00
" 21	D. W. Groff.....	Express'ge and drayage from Oct. 27, '86, to July 18, '87.....	108	9 00
Aug. 5	Nitschke Bros.....	2,000 letter heads	109	6 50
" 5	Henry J. Green	4 max.thermometers and packing	110	18 35
" 5	E. H. Mark.....	Binding reports	111	8 80
" 5	A. N. Ozias	Assistance in office	112	25 00
" 5	E. H. Mark.....	Salary as Secretary to Aug. 1	113	50 00
" 5	D. W. C. Jones, P. M..	2,000 2-c.wrap's, 1,000 2-c. stamps	114	62 00
" 13	C. A. Marple	Assistance in office Jan., 1887.....	115	10 00
" 13	Frank Fleming	Mailing reports since Nov. 1, '86	116	44 00
" 13	E. H. Mark.....	Salary as Secretary to Aug. 15 ...	117	50 00
" 13	E. H. Mark, Sec'y	Expens's for telephone messages, boxes and expressage	118	2 91
" 18	C. Rice.....	Carpenter-work and paint'g shutters at Yellow Springs.....	119	1 15
" 18	J. A. McAuley.....	One cold-wave flag, 6 ft. x 6 ft ...	120	2 00
" 25	W. U. Tel. Co.....	Telegr. message from Thomas to Bonham, etc.....	121	1 26
Sept. 5	D. W. C. Jones, P. M..	1,000 2-c. wrap'rs, 100 2-c. stamps	122	23 00
" 6	B. F. Thomas.....	Expense of trip to Washington, D. C., expense of State fair.....	123	40 90
" 20	D. W. C. Jones, P. M..	700 2c. wrappers.....	124	14 70
" 20	Chas. M. Strong	Clerical service to Sept. 15.....	125	30 00
" 28	Frank Fleming	Mailing reports during July and August.....	126	8 00
Oct. 5	M. F. Capron.....	Repairing and moving shelter at central station.....	127	12 70
" 15	Chas. M. Strong	Clerical services to Oct. 15.....	128	30 00
" 25	D. W. C. Jones, P. M..	800 2-c. wrappers	129	16 80
Nov. 4	D. W. Groff	Expressage	130	11 95
" 15	D. W. C. Jones, P. M..	800 2-c. wrappers	131	16 80
	Total.....	.....		\$1,584 84
Total available funds for the year				\$2,883 60
Expended during year				1,584 84
Balance on hand				\$1,298 76

LIST OF STATIONS REPORTING TO THE OHIO METEOROLOGICAL BUREAU, WITH LATITUDE, LONGITUDE, ELEVATION,
TIME OF ESTABLISHMENT, EQUIPMENT, AND NAME OF OBSERVERS.

Stations.		Latitude.	Longitude.	Elevation.	Date of estab- lishment.	Equipment.		Name of observer.
Number.	Place.							
1	Cincinnati	39° 6'	84° 26'	628 feet.	.....	Signal service equipment.....	.....	Sergt. P. T. Jenkins.
10 A	Toledo	41° 40'	83° 34'	651 "	.....	" "	.....	Pvt. A. E. Fraser.
10 B	Sandusky	41° 25'	82° 40'	638 "	.....	" "	.....	Sergt. B. F. Hough.
13 A	Columbus	39° 58'	83° 0'	812 "	.....	" "	.....	" Orin Parker.
21 A	Cleveland	41° 30'	81° 27'	690 "	.....	" "	.....	" W.H.Hammon.
2	College Hill	39° 18'	84° 32'	370 "	March, 1884	Bar., Max. and Min., Hygrometer, Wind-vain, Rain-gauge...	.....	Prof. A. D. Morrill.
3	Dayton	39° 44'	84° 09'	790 "	October, 1882	" "	"	Mrs. E. L. Boyer.
4 A	New Bremen	40° 31'	84° 23'	981 "	1882	" "	"	Prof. C.W. Williamson.
4 B	Sidney	40° 15'	84° 07'	960 "	December, 1882	" "	"	Ed. Pence.
4 C	Greenville	40° 07'	84° 50'	1,063 "	1885	" "	"	Chas. G. Katzenberger.
4 D	Celina	40° 35'	84° 35'	890 "	June, 1887	" "	"	Prof. W. F. McDaniel.
5 A	Upper Sandusky	40° 44'	83° 16'	880 "	October, 1882	" "	"	Dr. A. Billhardt.
6 A	Wauseon	41° 36'	84° 07'	800 "	1882	" "	"	Thos. Mikesell.
6 B	Paulding	41° 09'	84° 36'	734 "	November, 1883	" "	"	L. E. Hitchcock.
6 C	Napoleon	41° 22'	84° 07'	682 "	December, 1885	" "	"	Dr. T. C. Hunter.
7 A	Clarksville	39° 25'	84° 12'	1,010 "	September, 1886	" "	"	E. T. M. Williams.
7 B	Yellow Springs	39° 47'	83° 51'	1,017 "	June, 1885	" "	"	Chas. W. Rice.
8 A	North Lewisburg	40° 13'	83° 34'	1,030 "	October, 1882	" "	"	H. D. Gowey.
9 A	Bangorville	40° 36'	82° 30'	.....	1882	" "	"	S. M. Painter.
11 A	Hanging Rock	38° 32'	82° 38'	551 feet.	1882	" "	"	James Bull.
11 B	Portsmouth	38° 44'	83° 0'	527 "	September, 1882	" "	"	D. B. Cotton, M. D.
12 A	Washington C. H.	39° 31'	83° 34'	975 "	December, 1882	" "	"	R. H. Morrow.
12 B	Waverly	39° 10'	82° 57'	612 "	1882	" "	"	H. W. Overman.
12 C	Georgetown	38° 52'	83° 47'	940 "	"	" "	"	Dr. T. W. Gordon.
13 B	Ohio State University	40° 0'	83° 01'	757 "	October, 1882	" "	"	M. Craig.
13 C	Westerville	40° 08'	83° 0'	850 "	December, 1882	" "	"	Prof. J. Haywood.
13 D	Logan	39° 35'	82° 19'	730 "	September, 1883	" "	"	Dr. J. Little.
14	Oberlin	41° 19'	82° 13'	855 "	October, 1882	" "	"	Prof. F. F. Jewett.
15 A	Marietta	39° 25'	81° 28'	640 "	1882	" "	"	Prof. T. D. Biscoe.
15 B	McConnelsville	39° 50'	81° 40'	704 "	March, 1884	" "	"	C. H. Morris.
15 C	Pomeroy	38° 18'	81° 50'	640 "	April, 1884	" "	"	Dr. D. H. Allard.
16 B	Newcomerstown	40° 23'	81° 33'	798 "	February, 1886	" "	"	Dr. A. M. Beers.
17 A	Quaker City	39° 38'	81° 16'	1,200 "	October, 1882	" "	"	Joel Hall.
17 B	New Alexandria	40° 15'	80° 45'	1,050 "	January, 1885	" "	"	Joseph A. Hook.
18 A	Canton	40° 49'	81° 23'	1,070 "	October, 1882	No Bar.	"	C. F. Stokey.
18 B	Youngstown	41° 06'	80° 39'	855 "	June, 1885	Bar., Max.	"	A. G. Frost.
19 A	Hiram	41° 19'	81° 09'	1,260 "	November, 1884	" "	"	Prof. Geo. H. Colton.

LIST OF STATIONS REPORTING TO THE OHIO METEOROLOGICAL BUREAU, ETC.—Concluded.

Stations.		Latitude.	Longitude.	Elevation.	Date of establishment.	Equipment.	Name of observer.
Number.	Place.						
19 B	Jefferson	41° 44'	80° 45'	934 feet.	January, 1884	Bar., Max. and Min., Hygrometer, Wind-vane, Rain-gauge	Judge E. C. Wade.
20	Wooster	40° 49'	81° 54'	1,068 "	April, 1883	Bar, Min., exposed Hygrometer, " "	Dr. O. N. Stoddard.
21 B	Cleveland	41° 30'	81° 27'	656 "	1883	No Bar., Max., Min., " "	G. A. Hyde.
22	Akron	41° 05'	81° 20'	1,080 "	February, 1887	Bar, " "	Prof. C. S. Howe.
.....	Weymouth.....	.....	.....	.....	.....	Rain-gauge.....	Dr. F. Young.
.....	Springboro.....	.....	.....	.....	.....	" .....	Miss Dora Ellis.
.....	Hudson .....	.....	.....	.....	.....	" .....	D. W. Myers.
.....	Waynesville.....	.....	.....	.....	.....	" .....	E. B. Michener.
.....	Ellsworth .....	.....	.....	.....	.....	" .....	D. A. Allen.
.....	Jacksonburg .....	.....	.....	.....	.....	" .....	Dr. J. B. Owsley.

LIST OF DISPLAY STATIONS, OHIO METEOROLOGICAL BUREAU.
WITH DATES OF ESTABLISHMENT OR DISCONTINUANCE.

Station.	Observer.	Established.	Discontinued.
New Philadelphia, O.....	E. Fribley.....	July 21, 1887	
Bellevue, O.....	E. M. Wolf	" "	
Conneaut, O.....	C. M. Hall.....	" "	
Richwood, O.....	A. B. Conkright.....	" "	
Fultonham, O.	C. B. Fanley.....	" "	
Pomeroy, O.....	D. N. Allard	" "	
Newcomerstown, O.....	Robert Bicker.....	" "	
Washington C. H., O.....	R. H. Morrow.....	" "	
Youngstown, O.....	A. G. Frost	" "	
Dayton, O.....	W. J. Abbey.....	" "	
Wilmington, O.....	W. G. & C. R. Fisher....	" "	
Oxford, O.....	Law, Schleuck & Co....	" "	
Blanchester, O.....	H. Rice & Son.....	" "	Nov. 20, 1887.
Leipsic, O.....	J. D. Haderman ..	" "	
Huntington, W. Va.....	Hon. H. Hutchinson....	" "	
Maysville, Ky.....	C. W. Phister.....	" "	Dec. 15, 1887.
Catlettsburg, Ky.....	F. K. Barbee.....	" "	
Delaware, O.....	J. W. Watkins.....	27, "	
Manchester, O.....	T. W. Connolly	Aug. 3, "	
Portsmouth, O.....	J. A. Turley ..	1, "	
West Liberty, O.....	W. S. Waugh.....	" "	
Sidney, O	E. Pence	" "	
Kenton, O.....	J. C. Mills & Son.....	6, "	
Lancaster, O.....	Beery & Beck.....	" "	
Lima, O	Watson & Co.....	" "	
Medina, O.....	Geo. M. Gray.....	" "	
Ripley, O.....	M. M. Murphy..	" "	
Urbana, O.....	Rock, Hughes & Co.....	" "	
Wapakoneta, O.....	Aug. Franke.....	" "	
Xenia, O.....	J. A. Hiveling	" "	
Galion, O.....	I. W. Marvin	8, "	
Findlay, O.	Will Frey	9, "	
Fostoria, O.....	Charles Hayes.....	10, "	
Morristown, O.....	John V. Fisher.....	16, "	
Van Wert, O.....	E. L. Wilkinson ..	18, "	
Ada, O.....	Agnew Welch.....	29, "	
Jefferson, O.....	J. A. Howells.....	30, "	Dec. 6, 1887.
Napoleon, O.....	T. C. Hunter	Sept. 8, "	Sept. 19, 1887.
Madison, O.....	S. D. Howells.....	Oct. 24, "	
McConnelsville, O.....	C. H. Morris.....	Nov. 14, "	
Warren, O.....	Charles S. Hunt ..	Nov. 29, "	

SUMMARY BY YEARS.

	1883.	1884.	1885.
Mean barometer	30.085 inches	30.056 inches	30.034 inches.
Highest barometer	30.752 inches, Feb. 18, Dayton	30.832 inches, Jan. 26, Canton	30.784 inches, Jan. 2, Wauseon.
Lowest barometer	29.310 inches, Dec. 27, Oberlin	29.148 inches, April 15, Wauseon	29.113 inches, Dec. 4, Wauseon.
Range of barometer	1.442 inches	16.84 inches	1.671 inches
Mean relative humidity	76.3 per cent.	76.8 per cent.	77.5 per cent.
Mean temperature	49.4	50.6	48.0.
Highest temperature	95.0 August 22, Waverly	99.0 Sept. 28, Oct. 1, Ironton.	101.0 July 21, O. S. University.
Lowest temperature	-17.5 January 22, Wauseon	-34.0 Jan 25, Sidney	-31.0 Jan. 29, Paulding.
Range of temperature	115.5	133.0	132.0.
Mean daily range of temperature	19.8	20.5	20.4.
Greatest daily range of temperature	55.2 March 18, Wauseon	50.0 Sept. 5, College Hill; Dec. 4, Hanging Rock	58.5 Jan. 30, Sidney.
Least daily range of temperature	0.5 Dec. 23, Waverly	1.1 Feb. 6, Wauseon	1.9 April 18, Hiram; Dec. 31, Logan.
Number of clear days	98.2	116.7	103.5.
Number of fair days	135.4	118.3	132.8.
Number of cloudy days	130.4	131.1	124.2.
Number of days rain fell	146	145	147.7.
Mean yearly rainfall	41.98 inches	40.19 inches	38.08 inches.
Mean daily rainfall	0.123 inches	0.110 inches	0.104.
Greatest rainfall	50.37 inches, Quaker City	47.64 inches, at Logan	43.73 at Hiram.
Least rainfall	32.79 inches, at Toledo	28.70 inches at Toledo	33.19 at Toledo.
Mean monthly rainfall	3.67 inches	3.35 inches	3.17 inches.
Mean number of clear days per month	8.2	9.7	8.6.
Mean number of fair days per month	11.3	9.9	11.1
Mean number of cloudy days per month	10.9	10.9	10.7.
Mean number of rainy days per month	12.2	12.0	12.3.
Prevailing direction of wind	S.W.	S.W.	S.W.

SUMMARY BY YEARS—Concluded.

	1886.	1887.	Summary for five years.
Mean barometer.....	30.045 inches, s.....	30.047 inches.....	30.053 inches.
Highest barometer.....	30.860 inches, Feb. 5, Georgetown.....	30.906 inches, at Canton and Hiram, Dec. 1.....	30.906 in. Dec. 1, '87, at Canton & Hiram.
Lowest barometer.....	29.108 inches, Jan. 9, Oberlin.....	29.164 inches, at Napoleon, Feb. 18.....	29.108 in., Jan. 9, '86, at Oberlin.
Range of barometer.....	1.752 inches.....	1.742 inches.....	1.798 inches.
Mean relative humidity.....	77.8 per cent.....	75.8 per cent.....	76.9 per cent.
Mean temperature.....	49° 6.....	51° 4.....	49° 8.
Highest temperature.....	98° 6 July 7, Wauseon.....	108° 0 July 18, at Pomeroy.....	108° 0 July 18, '87, at Pomeroy.
Lowest temperature.....	—21° 5 Jan. 12, Waverly.....	—21° 0 Jan. 7th, at Paulding.....	—34° 0 Jan. 25, '84, at Sidney.
Range of temperature.....	120° 1.....	129° 0.....	142° 0.
Mean daily range of temperature.....	20° 2.....	21° 2.....	20° 4.
Greatest daily range of temperature.....	57° Dec. 11, Paulding.....	57° 0 April 11, at Findlay.....	58° 5 Jan. 30, '85, Sidney.
Least daily range of temperature.....	1° 0 March 27, Granville.....	1° 0 Jan. 15, and April 16, at Wooster and Logan.....	0° 5 Dec. 23, '83, Waverly.
Number of clear days.....	118.4.....	113.8.....	110.1.
Number of fair days.....	125.7.....	127.3.....	129.9.
Number of cloudy days.....	121.....	123.9.....	126.9.
Number of days rain fell.....	130.7.....	120.9.....	138.1.
Mean yearly rainfall.....	36.71 inches.....	33.63 inches.....	38.72 inches.
Mean daily rainfall.....	0.100.....	0.092 inches.....	0.106 inches.
Greatest rainfall.....	48.11 inches, at Hanging Rock.....	44.35 inches, at Georgetown.....	50.37 in., at Quaker City, 1883.
Least rainfall.....	27.37 inches, at Youngstown.....	25.64 inches, at Oberlin.....	25.64 in., at Oberlin, 1887.
Mean monthly rainfall.....	3.06 inches.....	2.80 inches.....	3.21 inches.
Mean number of clear days per month.....	9.9.....	9.5.....	9.2.
Mean number of fair days per month.....	10.5.....	10.6.....	10.7.
Mean number of cloudy days per month.....	10.1.....	10.3.....	10.6.
Mean number of rainy days per month.....	10.9.....	10.1.....	11.5.
Prevailing direction of wind.....	S.W.....	S.W.....	S.W.

STATE SUMMARY FOR 1887.

Months.	Barometer.						Mean relative hu- midity.	Temperature.					
	Mean.	Highest.	Date.	Lowest.	Date.	Range.		Mean.	Highest.	Date.	Lowest.	Date.	Range of temperature.
January	30.050	30.727	3d	29.258	14th	1.469	80.7	26.4	74.9	22d	-21.0	7th	95.9
February	30.165	30.890	4th	29.164	18th	1.726	84.8	35.9	70.0	10th	0.3	1st	69.7
March	30.053	30.680	4th	29.292	24th	1.388	77.2	35.8	75.0	2d	5.5	29th	69.5
April	30.006	30.563	8th	29.251	28th	1.312	70.6	49.8	90.0	*1	10.0	19th	80.0
May	29.986	30.342	6th	29.594	13th	0.748	74.3	66.0	97.0	21st	38.0	*2	59.0
June	29.990	30.453	29th	29.620	2d	0.833	75.5	71.0	102.0	20th	38.0	24th	64.0
July	29.961	20.252	1st	29.523	9th	0.729	71.7	77.9	108.0	18th	42.0	24th	66.0
August	29.990	30.331	31st	29.645	17th	0.686	70.9	70.9	104.0	*3	33.0	29th	71.0
September	30.086	30.434	16th	29.600	7th	0.834	74.6	63.7	98.0	13th	23.0	24th	75.0
October	30.077	30.515	25th	29.550	4th	0.965	72.2	49.3	89.8	7th	11.5	31st	78.3
November	30.076	30.880	30th	29.290	19th	1.590	74.4	39.3	75.0	26th	- 8.0	29th	83.0
December	30.126	30.906	1st	29.551	31st	1.355	82.1	31.3	62.0	*5	- 8.0	30th	70.0
Mean	30.047	30.906	Dec. 1st	29.164	Feb. 18th	1.742	75.8	51.4	108.0	July 18th	-21.0	Jan. 7th	129.0

STATE SUMMARY FOR 1887—Concluded.

Months.	Temperature.					No. of days.				Monthly rainfall.	Average daily rainfall.	Prevailing wind.
	Mean daily range.	Greatest daily range.	Date.	Least daily range.	Date.	Clear.	Fair.	Cloudy.	Rainfall.			
January	19.2	44.0	7th	1.0	15th	3.9	11.3	15.8	13.1	2.08	0.067	S.W.
February	17.0	45.0	11th	2.0	16th	2.6	7.6	17.8	16.7	6.11	0.218	S.W.
March	18.1	42.0	24th	2.5	28th	6.8	10.3	13.9	11.2	2.23	0.072	N.W.
April	24.5	57.0	11th	1.0	16th	10.2	12.9	6.9	9.4	3.83	0.128	S.W.
May	22.8	46.0	20th	4.5	6th	12.6	11.7	6.7	12.0	2.87	0.092	N.E.
June	22.6	45.0	27th	2.5	10th	14.0	10.0	6.0	9.7	3.77	0.126	S.W.
July	23.9	50.0	12th	6.0	8th	13.8	13.6	3.6	8.7	2.16	0.070	S.W.
August	25.9	54.0	8th	5.0	17th	12.9	11.6	6.5	8.3	2.39	0.076	N.E.
September	22.5	51.0	5th	2.0	*4	9.0	12.0	9.0	10.8	2.17	0.072	N.E.
October	21.8	49.8	7th	2.0	4th	12.2	9.0	9.8	3.7	0.75	0.024	S.W.
November	21.5	48.0	6th	2.9	15th	11.4	7.7	10.9	8.1	2.81	0.094	S.W.
December	15.3	43.5	28th	2.0	12th	4.4	9.6	17.0	9.2	2.46	0.079	S.W.
Mean	21.2	57.0	Apr. 11th	1.0	*6	113.8	127.3	123.9	120.9	33.63	0.092	S. W.

*1 12th and 13th. *2 1st and 19th. *3 4th and 10th. *4 11th and 16th. *5 4th, 5th and 6th.
*6 Jan. 15th, April 16th.

STATION NO. 1.

P. T. JENKINS, Sergeant Signal Service Corps, OBSERVER,

Cincinnati, Ohio.

Latitude, 39°6' ; Longitude, 84°26' ; Elevation, 620 ft.

Months.	Mean Barometer.	Highest Barometer.	Date.	Lowest Barometer.	Date.	Range of Barometer.	Mean Relative Humidity.	Mean Temperature.	Highest Temperature.
January	30.052	30.653	3d	29.377	13th	1.276	71.4	29.6	65.5
February.....	30.170	30.707	13th	29.282	18th	1.425	76.8	39.3	70.0
March	30.073	30.485	4th	29.434	24th	1.051	67.1	40.9	73.0
April	30.034	30.457	8th	29.355	18th	1.102	60.4	53.3	84.4
May	29.990	30.240	15th	29.710	24th	.530	67.3	69.3	88.8
June.....	30.005	30.311	27th	29.731	1st	.580	65.7	74.6	90.9
July	29.988	30.166	1st	29.746	9th	.430	63.2	81.6	101.2
August	29.990	30.260	31st	29.740	17th	.520	59.6	75.7	99.6
September.....	30.086	30.358	20th	29.778	7th	.580	58.3	68.2	93.0
October	30.106	30.420	25th	29.780	23d	.640	55.4	53.0	81.4
November	30.105	30.757	30th	29.434	19th	1.323	61.3	43.4	74.2
December	30.111	30.740	1st	29.580	31st	1.160	71.7	34.7	58.8
Average	30.059	30.757	Nov. 30th	29.282	Feb. 18th	1.475	64.3	55.3	101.2

STATION NO. 1.

P. T. JENKINS, Sergeant Signal Service Corps, OBSERVER,

Cincinnati, Ohio.

Latitude, 39°6' ; Longitude, 84°26' ; Elevation, 620 ft.

Date.	Lowest Temperature.	Date.	Range of Temperature.	Mean Daily Range of Temperature.	Greatest Daily Range of Temperature.	Date.	Least Daily Range of Temperature.	Date.	Number of Clear Days.	Number of Fair Days.	Number of Cloudy Days.	Number of Days on which Rain fell.	Total Rainfall for Month.	Average Daily Rainfall.	Prevailing Direction of Wind.
22d	−5.2	3d	70.7	18.9	34.4	19th	7.0	5th	6	11	14	17	2.37	.076	S.W.
10th	14.7	13th	55.3	17.0	42.9	11th	5.0	22d	2	11	15	17	7.29	.260	S.E.
2d	18.6	29th	54.4	16.6	31.6	24th	5.5	15th	5	11	15	12	2.07	.067	N.W
14th	27.2	5th	57.2	20.5	34.3	13th	6.1	18th	10	16	4	10	5.86	.195	S.E.
22d	52.8	27th	36.0	17.9	31.6	1st	5.7	5th	7	19	5	14	3.62	.117	N.E.
*1	52.4	24th	38.5	17.5	25.6	30th	5.6	22d	9	13	8	7	2.64	.088	S.E.
18th	63.1	11th	38.1	19.8	29.1	.....	11.2	.....	13	13	5	12	1.31	.042	S.E.
4th	53.6	29th	46.0	19.9	27.6	8th	9.9	23d	11	16	4	9	2.81	.091	N.E.
13th	40.2	24th	52.8	19.6	37.6	9th	6.7	18th	7	12	11	12	1.93	.064	S.W.
9th	26.1	31st	55.3	20.6	34.9	6th	12.0	20th	12	14	5	6	0.55	.018	N.W.
3d	8.2	28th	66.0	20.7	43.9	27th	8.0	13th	11	10	9	10	2.83	.094	S.E.
4th	1.3	29th	57.5	17.8	38.8	28th	6.5	8th	3	8	20	11	1.80	.058	S.E.
July 18th	−5.2	Jan. 3d	106.4	18.7	43.9	Nov. 27th	5.0	Feb. 15th	96	154	115	137	35.08	.096	S.E.

*1 18th and 20th.

STATION No. 2.

PROF. A. D. MORRILL, OBSERVER,

College Hill, Ohio.

Latitude, 39° 18'; Longitude, 84° 32'; Elevation, 800 feet.

Months.	Mean Barometer.	Highest Barometer.	Date.	Lowest Barometer.	Date.	Range of Barometer.	Mean Relative Humidity.	Mean Temperature.	Highest Temperature.
January	29.956	30.467	3d	29.300	13th	1.167	95.1	27.0	60.0
February	30.028	30.542	4th	29.198	18th	1.344	90.8	37.0	63.5
March	30.011	30.395	4th	29.617	24th	0.778	82.4	39.1	70.5
April	29.993	30.397	8th	29.470	28th	0.927	72.4	52.2	85.0
May	29.971	30.179	15th	29.886	30th	0.493	75.7	67.3	86.0
June	29.936	30.230	27th	29.655	1st	0.575	71.3	73.2	91.2
July	29.927	30.095	1st	29.711	22d	0.384	69.0	80.4	99.1
August	29.968	30.228	31st	29.745	17th	0.583	71.2	73.6	98.0
September	30.097	30.359	20th	29.803	7th	0.556	80.7	66.4	91.0
October	30.108	30.429	25th	29.787	23d	0.742	81.0	49.9	80.0
November	30.128	30.744	30th	29.477	19th	1.267	80.9	41.0	70.5
December	30.147	30.766	1st	29.633	31st	1.133	87.8	31.7	55.5
Average	30.022	30.766	Dec. 1st	29.198	Feb. 18th.	1.568	79.9	52.0	99.1

STATION No. 2.

PROF. A. D. MORRILL, OBSERVER,

College Hill, Ohio.

Latitude, 39° 18'; Longitude, 84° 32'; Elevation, 800 feet.

Date.	Lowest Temperature.	Date.	Range of Temperature.	Mean Daily Range of Temperature.	Greatest Daily Range of Temperature.	Date.	Least Daily Range of Temperature.	Date.	Number of Clear Days.	Number of Fair Days.	Number of Cloudy Days.	Number of Days on which Rain Fell.	Total Rainfall for Month.	Average Daily Rainfall.	Prevailing Direction of Wind.
22d	-10.0	3d	70.0	18.6	36.0	*1	2.5	15th	3	10	18	7	2.47	.080	S.W.
10th	10.0	13th	53.5	17.2	38.5	11th	6.5	16th	2	8	18	13	7.16	.256	S.W.
2d	12.0	29th	58.5	17.6	32.0	1st	6.0	21st	2	15	14	13	2.35	.076	N.W.
14th	23.0	5th	62.0	21.1	31.2	3d	5.0	17th	9	15	6	9	6.17	.206	N.W.
20th	48.0	27th	38.0	18.5	35.2	1st	8.0	6th	15	6	10	14	3.66	.118	N.E.
30th	48.0	1st	43.2	19.5	27.5	27th	11.5	2d	17	7	6	7	1.94	.065	N.W.
18th	62.0	24th	37.1	19.9	28.5	16th	11.0	4th	10	14	5	10	1.27	.041	S.
4th	50.0	*2	48.0	20.1	29.0	9th	10.0	*3	12	14	5	8	2.60	.084	E.
*4	35.0	24th	56.0	19.2	30.0	22d	4.5	18th	2	18	10	12	2.94	.098	E.
*5	22.0	30th	58.0	21.3	33.0	6th	13.5	21st	11	14	6	3	0.39	.013	S.W.
3d	1.0	28th	69.5	21.2	40.0	27th	5.0	23d	13	7	10	7	3.64	.121	S.W.
4th	- 4.0	29th	59.5	16.4	41.0	28th	8.5	16th	4	9	18	6	2.14	.069	S.
July 18th	-10.0	Jan. 3d	109.1	19.2	40.0	Nov. 27th	2.5	Jan. 15th	100	136	128	109	36.73	.101	S.W.

*1 17th and 19th.

*2 25th, 28th and 29th.

*3 22d and 23d.

*4 6th and 13th.

*5 7th and 9th.

STATION NO. 3.

MRS. EDITH E. L. BOYER, OBSERVER,

Dayton, Montgomery County, Ohio.

Latitude, 39° 44'; Longitude, 84° 9'; Elevation, 790 feet.

Months.	Mean Barometer.	Highest Barometer.	Date.	Lowest Barometer.	Date.	Range of Barometer.	Mean Relative Humidity.	Mean Temperature.	Highest Temperature.
January	30.046	30.660	3d	29.430	13th	1.230	78.0	26.9	62.5
February	30.214	30.764	4th	29.340	18th	1.424	83.3	36.8	63.5
March	30.066	30.522	4th	29.401	24th	1.121	71.4	38.0	69.5
April	30.019	30.455	8th	29.448	28th	1.007	67.9	51.7	84.7
May	29.993	30.253	15th	29.712	24th	.541	71.2	68.2	86.0
June	30.039	30.327	27th	29.728	2d	.599	64.6	74.7	94.5
July	29.971	30.128	1st	29.762	9th	.396	65.5	83.6	102.0
August	29.937	30.262	31st	29.732	17th	.500	68.1	73.1	99.2
September	30.098	30.366	20th	29.822	6th	.544	69.5	65.6	83.0
October	30.104	30.451	25th	29.712	23d	.739	66.7	50.3	81.4
November	30.100	30.781	30th	29.450	19th	1.331	72.3	40.3	69.5
December	30.165	30.810	1st	29.621	31st	1.189	85.3	32.3	56.5
Average	30.066	30.810	Dec. 1st	29.340	Feb. 18th	1.470	72.0	53.5	102.0

STATION NO. 3.

MRS. EDITH E. L. BOYER, OBSERVER,

Dayton, Montgomery County, Ohio.

Latitude, 39° 44'; Longitude, 84° 9'; Elevation, 790 feet.

Date.	Lowest Temperature.	Date.	Range of Temperature.	Mean Daily Range of Temperature.	Greatest Daily Range of Temperature.	Date.	Least Daily Range of Temperature	Date.	Number of Clear Days.	Number of Fair Days.	Number of Cloudy Days.	Number of Days on which Rain fell.	Total Rainfall for Month.	Average Daily Rainfall.	Prevailing Direction of Wind.
22d	—8.0	3d	70.5	19.3	35.5	17th	7.0	15th	6	12	13	11	2.05	.066	S.W.
10th	10.2	13th	53.3	17.8	41.5	11th	6.5	15th	6	7	15	18	5.30	.189	W.
2d	14.0	29th	55.5	18.1	33.0	24th	8.0	22d	7	9	15	7	3.39	.110	N.W.
13th	21.0	5th	60.7	24.4	38.7	13th	8.0	18th	10	16	4	8	4.15	.138	S.W.
21st	48.5	27th	39.5	21.5	31.0	29th	12.5	6th	15	11	5	13	2.54	.082	N.E.
30th	47.0	24th	47.5	24.3	33.0	29th	11.3	2d	18	9	3	9	4.33	.141	W.
17th	59.5	11th	42.5	24.9	35.3	30th	14.0	16th	15	12	4	8	3.27	.106	S.W.
4th	43.0	29th	56.2	23.0	35.7	4th	13.0	*1	10	17	4	11	2.08	.067	N.E.
6th	31.0	24th	52.0	22.3	39.0	9th	6.0	18th	10	13	7	10	1.37	.046	E.
7th	20.0	31st	61.0	22.0	36.0	16th	10.5	5th	15	9	7	3	0.52	.014	S.W.
3d	—1.5	28th	71.0	22.0	42.0	27th	6.8	23d	14	5	11	7	3.53	.118	S.W.
• 4th	—1.8	29th	58.3	15.7	43.5	28th	8.0	*2	7	11	13	8	2.51	.081	S.W.
July 17th	—8.0	Jan. 3d	110.0	21.2	43.5	Jan. 28th	6.0	Sept. 18th	133	131	101	113	35.04	.096	S.W.

*1 17th and 22d. *2 15th and 18th.

STATION No. 4A.

C. W. WILLIAMSON, OBSERVER,

New Bremen, Auglaize County, Ohio.

Latitude, 40° 31'; Longitude, 84° 23'; Elevation, 981 feet.

[illegible]

STATION No. 4A.

C. W. WILLIAMSON, OBSERVER,

New Bremen, Auglaize County, Ohio.

Latitude, 40° 31'; Longitude, 84° 23'; Elevation, 981 feet.

Date.	Lowest Temperature.	Date.	Range of Temperature.	Mean Daily Range of Temperature.	Greatest Daily Range of Temperature.	Date.	Least Daily Range of Temperature.	Date.	Number of Clear Days.	Number of Fair Days.	Number of Cloudy Days.	Number of Days on which Rain Fell.	Total Rainfall for Month.	Average Daily Rainfall.	Prevailing Direction of Wind.
22d	- 14.0	3d	84.0	17.5	35.0	11th	4.2	17th	5	5	21	5	1.80	.058	S.W.
10th	11.0	27th	57.0	19.6	42.0	11th	4.0	*1	2	6	20	14	7.05	.252	S.W.
14th	21.0	19th	61.0	29.3	43.0	8th	14.0	17th	14	12	4	5	2.34	.078	N.W.
17th	55.0	24th	50.0	24.7	34.0	30th	12.0	*2	17	12	2	2	2.55	.082	S.W.
3d	42.0	29th	55.0	24.7	37.0	*3	5.0	17th	17	6	8	5	2.74	.089	S.W.
6th	29.0	24th	62.0	26.1	45.0	.....	12.0	.....	14	9	7	6	1.59	.053	W.
7th	21.0	*4	58.0	24.3	35.0	16th	11.0	4th	13	13	5	1	0.92	.030	S.W.
7th	2.0	29th	63.0	22.1	36.0	2d	7.0	26th	13	6	11	7	4.82	.161	S.W.
4th	- 5.0	30th	59.0	16.8	36.0	*5	7.0	*6	4	13	14	6	4.83	.166	W.

*1 13th and 20th.

*2 9th and 10th.

*3 8th and 9th.

*4 25th and 26th.

*5 28th and 30th.

*6 2d, 10th and 15th.

STATION No. 4B.

ED. PENCE, OBSERVER,

Sidney, Shelby County, Ohio.

Latitude, 40° 15'; Longitude, 84° 7'; Elevation, 960 feet.

Months.	Mean Barometer.	Highest Barometer.	Date.	Lowest Barometer.	Date.	Range of Barometer.	Mean Relative Humidity.	Mean Temperature.	Highest Temperature.
January	30.037	30.526	3d	29.474	13th	1.052	95.4	23.8	59.0
February.....	30.168	30.735	4th	29.281	18th	1.454	93.4	34.4	62.0
March.....	30.040	30.522	4th	29.352	24th	1.170	88.5	37.0	65.0
April.....	29.983	30.339	8th	29.407	28th	0.932	68.8	51.2	83.5
May	29.961	30.210	3d	29.785	30th	0.425	73.6	67.6	89.5
June	29.973	30.292	27th	29.675	1st	0.617	70.5	73.7	95.0
July	29.929	30.109	1st	29.745	22d	0.364	70.1	79.9	100.5
August	29.970	30.245	31st	29.726	17th	0.519	66.5	69.9	97.0
September	30.062	30.350	20th	29.757	7th	0.593	71.8	65.2	92.0
October.....	30.071	30.447	25th	29.740	20th	0.707	75.8	48.4	80.0
November.....	30.081	30.741	30th	29.445	19th	1.296	73.3	39.5	69.0
December	30.107	30.690	1st	29.609	31st	1.081	80.7	30.1	55.0
Average.....	30.029	30.741	Nov. 30th	29.281	Feb. 18th	1.460	77.4	51.7	100.5

STATION No. 4B.

ED. PENCE, OBSERVER,

Sidney, Shelby County, Ohio.

Latitude, 40° 15'; Longitude, 84° 7'; Elevation, 960 feet.

Date.	Lowest Temperature.	Date.	Range of Temperature.	Mean Daily Range of Temperature.	Greatest Daily Range of Temperature.	Date.	Least Daily Range of Temperature.	Date.	Number of Clear Days.	Number of Fair Days.	Number of Cloudy Days.	Number of Days on which Rain fell.	Total Rainfall for Month.	Average Daily Rainfall.	Prevailing Direction of Wind.
22d	—18.5	7th	77.5	20.9	30.6	17th	8.0	28th	6	10	15	11	1.89	.061	S.W.
10th	10.5	1st	51.5	17.9	35.0	3d	7.0	* 1	4	4	20	13	5.95	.212	S.W.
2d	15.0	29th	50.0	17.8	32.0	25th	6.0	15th	7	12	12	4	.54	.017	N.W.
14th	22.0	5th	61.5	22.9	38.0	9th	8.0	18th	11	12	7	6	3.90	.130	S.W.
23d	50.0	* 2	39.5	21.0	33.0	19th	6.0	2d	15	7	9	11	3.35	.108	N.W.
29th	47.0	24th	48.0	24.7	36.0	29th	10.0	2d	20	5	5	6	2.80	.093	N.W.
17th	60.0	* 3	40.5	23.7	33.0	12th	16.0	* 4	11	18	2	8	4.20	.125	S.W.
10th	44.0	* 5	53.0	22.1	35.0	3d	12.0	* 6	18	8	5	7	2.35	.076	N.E.
13th	31.0	24th	61.0	20.2	37.0	9th	8.0	30th	14	9	7	8	2.85	.095	S.E.
7th	25.0	30th	55.0	21.1	33.0	26th	4.0	5th	20	5	6	3	0.60	.019	S.W.
3d	3.0	29th	66.0	21.1	41.0	3d	6.0	20th	16	6	8	7	4.10	.137	S.
4th	0.0	* 7	55.0	14.1	39.0	28th	3.0	12th	11	6	14	5	3.00	.007	S.
July 17th	—18.5	Jan. 7th	119.0	20.6	41.0	Nov. 3d	3.0	Dec. 12th	153	102	110	89	35.53	.097	S.W.

* 1 15th and 22d. * 2 19th, 27th, 28th and 29th. * 3 4th and 12th. * 4 19th and 21d. * 5 28th and 29th. * 6 11th, 17th and 27th. * 7 28th, 29th and 30th.

STATION No. 4C.

CHAS. L. KATZENBERGER, OBSERVER,

Greenville, Darke County, Ohio.

Latitude, 40° 07'; Longitude, 84° 50' ; Elevation, 1,063 feet.

Months.	Mean Barometer.	Highest Barometer.	Date.	Lowest Barometer.	Date.	Range of Barometer.	Mean Relative Humidity.	Mean Temperature.	Highest Temperature.
January	30.055	30.580	3d	29.490	13th	1.090	.....	24.3	59.0
February	30.171	30.647	4th	29.332	18th	1.355	90.0	33.3	60.0
March	30.065	30.502	4th	29.411	24th	1.091	78.3	36.1	65.2
April	30.015	30.409	8th	29.506	28th	0.903	70.3	49.8	82.0
May	20.000	30.225	3d	29.707	30th	0.518	74.1	64.8	84.0
June	30.003	30.306	27th	29.712	2d	0.595	70.7	70.3	86.8
July	29.952	30.072	14th	29.614	9th	0.458	69.1	77.0	95.0
August	30.021	30.320	30th	29.771	17th	0.549	72.7	69.2	93.0
September	30.016	30.338	20th	29.816	7th	0.522	76.6	62.3	87.5
October	30.069	30.399	25th	29.700	23d	0.699	75.3	47.2	77.0
November	30.095	30.726	30th	29.455	19th	1.271	74.5	38.2	67.0
December	30.098	30.743	1st	29.606	31st	1.137	88.9	29.2	55.0
Average	30.047	30.743	Dec. 1st	29.332	Feb. 18th	1.411	76.4	50.2	95.0

STATION No. 4C.

CHAS. L. KATZENBERGER, OBSERVER,
Greenville, Darke County, Ohio.

Latitude, 40° 07'; Longitude, 84° 50'; Elevation, 1,063 feet.

Date.	Lowest Temperature.	Date.	Range of Temperature.	Mean Daily Range of Temperature.	Greatest Daily Range of Temperature.	Date.	Least Daily Range of Temperature.	Date.	Number of Clear Days.	Number of Fair Days.	Number of Cloudy Days.	Number of Days on which Rain Fell.	Total Rainfall for Month.	Average Daily Rainfall.	Prevailing Direction of Wind.
22d	-12.5	3d	71.5	17.6	34.0	17th	5.5	15th	5	15	11	6	2.84	.092	S.
*1	9.0	13th	51.0	14.9	39.0	11th	4.0	22d	3	6	19	8	5.31	.190	N.W.
2d	13.8	29th	51.4	16.4	27.8	24th	6.0	21st	6	12	13	7	1.95	.063	N.W.
14th	23.8	5th	58.2	22.1	34.0	*2	6.5	18th	5	17	8	7	3.25	.108	S.
20th	47.5	19th	36.5	19.2	30.5	19th	10.0	30th	4	22	5	13	3.41	.110	N.
29th	47.0	24th	39.8	19.2	30.0	*3	6.2	2d	10	16	4	8	3.72	.124	N.W.
17th	57.5	24th	37.5	20.5	29.8	30th	10.8	23d	5	24	2	5	.92	.029	S.W.
4th	46.0	30th	47.0	19.0	31.2	3d	7.0	17th	8	17	6	6	4.65	.118	E.
13th	31.2	24th	56.3	18.6	34.3	9th	5.0	18th	1	21	8	11	1.78	.059	W.
7th	21.8	30th	55.2	15.1	32.0	20th	9.0	*4	9	18	4	6	0.89	.029	S.W.
3d	4.0	*5	63.0	19.1	40.0	27th	7.0	*6	11	7	12	5	2.96	.099	S.
4th	-2.0	29th	57.0	13.4	37.0	28th	3.5	10th	4	12	15	6	2.78	.090	W.
July 17th	-12.5	Jan. 3d	107.5	17.9	40.0	Nov. 27th	3.5	Dec. 10th	71	187	107	88	34.46	.094	S. N.W.

*1 10th and 11th.*2 8th and 9th.*3 13th and 27th.*4 18th and 24th.

*5 28th and 29th.*6 15th and 20th.

STATION NO. 4D.

W. F. McDANIEL, OBSERVER,

Celina, Mercer County, Ohio.

Latitude, 40°35' ; Longitude, 84°35' ; Elevation, 890 feet.

Date.	Lowest Temperature.	Date.	Range of Temperature.	Mean Daily Range of Temperature.	Greatest Daily Range of Temperature.	Date.	Least Daily Range of Temperature.	Date.	Number of Clear Days.	Number of Fair Days.	Number of Cloudy Days.	Number of Days on which Rain Fell.	Total Rainfall for Month.	Average Daily Rainfall.	Prevailing Direction of Wind.
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7th	19.0	30th	62.0	30.2	39.0	28th	6.5	9th	12	9	10	6	1.32	.043	S.W.
3d	6.0	28th	64.0	20.8	42.0	27th	9.0	*1	8	9	13	5	2.35	.078	S.W.
4th	- 2.0	29th	59.5	17.3	38.7	28th	2.0	12th	6	12	13	5	2.01	.065	S.W.
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*1 11th, 15th and 25th.

STATION No. 5A.

DR. A. BILLHARDT, OBSERVER,

Upper Sandusky, Wyandot County, Ohio.

Latitude, 40° 44'; Longitude, 88° 16'; Elevation, 880 feet.

Months.	Mean Barometer.	Highest Barometer.	Date.	Lowest Barometer.	Date.	Range of Barometer.	Mean Relative Humidity.	Mean Temperature.	Highest Temperature.
January	30.062	30.655	3d	29.556	20th	1.099	73.3	24.8	60.0
February	30.188	30.807	4th	29.219	18th	1.588	84.3	33.8	64.0
March	30.086	30.630	4th	29.384	24th	1.246	72.3	35.2	64.0
April	30.018	30.518	8th	29.395	28th	1.123	61.9	50.0	84.0
May	30.008	30.255	15th	29.680	30th	.575	65.8	66.1	90.0
June.....	29.999	30.375	27th	29.718	22d	.657	68.0	72.9	91.0
July	29.971	30 146	1st	29.675	9th	.471	61.7	79.4	99.0
August	30.012	30.288	31st	29.767	17th	.521	70.0	70.9	95.0
September.....	30.103	30.381	20th	29.767	7th	.614	.....	63.8	91.0
October.....	30.026	30.358	25th	29.624	23d	.774	66.7	49.3	81.0
November	30.115	30.832	30th	29.389	19th	1.443	66.6	39.3	68.0
December	30.147	30.855	1st	29.629	17th	1.226	74.0	30.9	54.0
Average.....	30.061	30.855	Dec. 1st	29.219	Feb. 18th	1.636	69.5	51.4	99.0

STATION No. 5A.

DR. A. BILLHARDT, OBSERVER,

Upper Sandusky, Wyandot County, Ohio.

Latitude, 40° 44'; Longitude, 83° 16'; Elevation, 880 feet.

Date.	Lowest Temperature.	Date.	Range of Temperature.	Mean Daily Range of Temperature.	Greatest Daily Range of Temperature.	Date.	Least Daily Range of Temperature.	Date.	Number of Clear Days.	Number of Fair Days.	Number of Cloudy Days.	Number of Days on which Rain f. ll.	Total Rainfall for Month.	Average Daily Rainfall.	Prevailing Direction of Wind.
22d	-10.0	11th	70.0	18.6	35.0	17th	7.0	15th	3	12	16	16	2.08	.067	S.W.
10th	8.0	1st	56 0	16.0	41.0	11th	6.0	20th	2	10	16	16	6.54	.234	W.
2d	11.0	29th	53.0	15.9	29.0	2d	8.0	4th	7	14	10	9	2.52	.081	N.W.
14th	17.0	19th	67.0	22.8	45.0	14th	7.0	2d	8	20	2	8	2.18	.073	S.W.
21st	47.0	* 1	43.0	21.3	34.0	15th	7.0	7th	12	12	7	14	2.84	.092	N.E.
30th	47.0	24th	44.0	22.8	32.0	* 2	13.0	* 3	11	12	7	11	4.57	.152	S.W.
17th	57.0	24th	42.0	24.5	37.0	13th	14.0	19th	15	11	5	9	1.69	.055	S.W.
* 4	42.0	29th	53.0	21.9	36.0	8th	9.0	14th	16	7	8	8	2.19	.070	N.E.
13th	34.0	24th	57.0	21.3	37.0	4th	8.0	30th	12	10	8	9	2.07	.069	N.E.
7th	22.0	26th	59.0	20.7	34.0	16th	10.0	9th	12	11	8	6	1.07	.035	N.W.
* 5	-1.0	29th	69.0	19.9	33.0	27th	7.0	20th	10	10	10	7	2.69	.090	S.
4th	0.0	30th	54.0	15.3	35.0	28th	8.0	* 6	6	9	16	6	3.85	.124	S.E.
July 17th	-10.0	Jan. 11th	109.0	20.1	45.0	Apl. 14th	6.0	Feb. 20th	114	138	113	119	34.29	.094	S.W.

* 1 15th and 19th. * 2 28th and 29th. * 3 2d and 9th. * 4 4th and 5th. * 5 3d and 7th
* 6 12th and 15th.

STATION No. 6A.

THOMAS MIKESELL, OBSERVER,

Wauseon, Fulton County, Ohio.

Latitude, 41° 36'; Longitude, 84° 7'; Elevation, 800 feet.

Months.	Mean Barometer.	Highest Barometer.	Date.	Lowest Barometer.	Date.	Range of Barometer.	Mean Relative Humidity.	Mean Temperature.	Highest Temperature.
January.....	30.009	30.656	3d	29.258	14th	1.398	75.9	19.3	58.6
February.....	30.173	30.871	4th	29.179	18th	1.692	83.6	28.8	56.4
March.....	30.082	30.651	4th	29.292	24th	1.359	67.2	31.5	61.7
April.....	29.997	30.513	8th	29.372	23d	1.141	59.9	46.2	83.5
May.....	30.002	30.279	14th	29.643	24th	.636	66.1	63.2	91.6
June.....	29.994	30.389	27th	29.709	22d	.680	71.5	69.2	92.3
July.....	29.968	30.160	14th	29.671	9th	.489	65.3	77.1	101.2
August.....	30.009	40.293	31st	29.731	22d	.562	64.6	68.8	99.8
September.....	30.103	30.432	16th	29.674	7th	.758	68.3	61.6	95.3
October.....	30.068	30.515	25th	29.593	3d	.922	66.3	46.5	83.3
November.....	30.081	30.878	30th	29.332	19th	1.546	68.8	37.1	67.7
December.....	30.112	30.840	1st	29.574	31st	1.266	81.6	26.9	57.8
Average.....	30.050	30.878	Nov. 30th	29.179	Feb. 18th	1.699	69.9	48.0	101.2

STATION No. 6A.

THOMAS MIKESELL, OBSERVER,

Wauseon, Fulton County, Ohio.

Latitude, 41° 36'; Longitude, 84° 7'; Elevation, 800 feet.

Date.	Lowest Temperature.	Date.	Range of Temperature.	Mean Daily Range of Temperature.	Greatest Daily Range of Temperature.	Date.	Least daily Range of Temperature.	Date.	Number of Clear Days.	Number of Fair Days.	Number of Cloudy Days.	Number of Days on which Rain Fell.	Total Rainfall for Month.	Average Daily Rainfall.	Prevailing Direction of Wind.
23d	−19.5	7th	78.1	20.8	38.0	11th	6.3	31st	4	9	18	18	2.36	.075	S.W.
8th	0.3	1st	56.1	15.5	32.8	11th	6.6	20th	2	8	18	21	7.19	.257	E.
2d	6.7	30th	55.0	21.3	32.3	30th	9.3	*1	7	15	9	10	1.49	.048	N.W.
*2	17.4	19th	66.1	28.9	50.6	12th	10.7	18th	8	16	6	13	1.52	.051	S.W.
21st	40.3	19th	51.3	26.7	44.1	15th	7.7	30th	12	12	7	11	3.50	.113	N.E.
30th	44.6	25th	47.7	25.7	39.2	13th	7.6	2d	9	15	6	13	3.55	.118	W.
17th	46.6	24th	54.6	29.0	38.5	24th	12.8	4th	18	12	1	6	2.87	.093	S.W.
5th	39.2	29th	60.6	29.9	46.5	8th	9.1	14th	10	13	8	10	1.52	.049	N.E.
13th	24.9	24th	70.4	27.4	45.0	5th	6.0	27th	9	8	13	13	1.70	.057	E.
7th	15.3	26th	68.0	23.3	42.4	16th	4.2	9th	8	11	12	12	1.97	.064	W.
7th	8.3	21st	59.4	21.5	37.6	2d	4.7	25th	10	9	11	10	3.78	.126	S.W.
4th	−3.7	30th	61.5	15.8	35.0	28th	3.8	12th	5	11	15	15	2.71	.087	S.W.
July 17th	−19.5	Jan. 7th	120.7	23.8	46.5	Aug. 8th	3.8	Dec. 12th	102	139	124	152	34.16	.094	S.W.

*1 21st and 27th.

*2 11th and 12th.

STATION No. 6B.

MR. L. E. HITCHCOCK, OBSERVER,

Paulding, Paulding County, Ohio.

Longitude, 41° 8' 37'' ; Longitude, 84° 36' ; Elevation, 734 feet.

Months.	Mean Barometer.	Highest Barometer.	Date.	Lowest Barometer.	Date.	Range of Barometer.	Mean Relative Humidity.	Mean Temperature.	Highest Temperature.
January	30.071	30.606	3d	29.420	13th	1.186	65.7	21.7	63.0
February	30.182	30.817	4th	29.216	18th	1.601	78.1	30.4	59.0
March	30.095	30.605	4th	29.402	24th	1.203	70.0	33.7	70.0
April	30.005	30.482	8th	29.474	28th	1.008	68.2	48.4	89.0
May	30.011	30.290	4th	29.885	30th	0.405	76.0	64.4	92.6
*June	30.049	30.370	27th	29.730	2d	0.640	81.1	70.9	97.0
July	29.973	30.132	1st	29.781	22d	0.351	71.9	77.9	101.4
August	30.013	30.289	*3	29.775	22d	0.514	70.9	68.3	99.0
September	30.108	30.434	16th	29.741	6th	0.693	73.1	61.4	95.0
October	30.089	30.476	25th	29.573	23d	0.903	74.1	46.6	84.0
November	30.119	30.852	30th	29.427	19th	1.425	68.4	36.7	66.0
December	30.132	30.803	1st	29.601	31st	1.202	69.2	27.2	56.0
Average	30.071	30.852	Nov. 30th	29.216	Feb. 18th	1.636	72.2	49.0	101.4

* Mean for 25 days. *3 29th and 30th.

STATION No. 6B.

MR. L. E. HITCHCOCK, OBSERVER,

Paulding, Paulding County, Ohio.

Longitude, 41° 8' 37'' ; Longitude, 84° 36' ; Elevation, 734 feet.

Date.	Lowest Temperature.	Date.	Range of Temperature.	Mean Daily Range of Temperature.	Greatest Daily Range of Temperature.	Date.	Least Daily Range of Temperature.	Date.	Number of Clear Days.	Number of Fair Days.	Number of Cloudy Days.	Number of Days on which Rain Fell.	Total Rainfall for Month.	Average Daily Rainfall.	Prevailing Direction of Wind.
23d	−21.0	7th	84.0	25.8	49.0	7th	5.0	15th	5	18	8	9	2.42	.078	S.W.
8th	1.0	1st	58.0	21.1	40.0	13th	10.0	*1	7	8	13	17	6.23	.223	S.W.
12th	9.0	29th	61.0	26.0	40.0	*2	14.0	22d	10	14	7	8	1.51	.049	S.W.
13th	17.0	6th	72.0	33.8	53.0	14th	13.0	16th	13	13	4	10	1.68	.056	S.W.
21st	38.0	19th	54.6	31.4	46.0	20th	16.0	6th	20	9	2	9	2.61	.084	S.W.
15th	38.0	24th	59.0	33.1	45.0	27th	14.0	2d	17	6	2	11	5.89	.196	S.W.
16th	42.0	24th	59.4	39.2	50.0	12th	24.0	18th	24	5	2	4	0.13	.004	N.E.
3d	33.0	29th	66.0	36.1	54.0	8th	17.0	23d	18	7	6	8	1.61	.052	N.
13th	23.0	24th	72.0	31.2	35.0	6th	14.0	8th	16	8	6	9	2.26	.075	S.W.
7th	18.0	26th	66.0	24.3	41.0	*4	5.0	5th	16	9	6	4	1.59	.061	S.W.
3d	7.0	21st	59.0	22.5	41.0	2d	4.0	20th	10	11	9	7	3.64	.121	S.W.
4th	− 8.0	30th	64.0	18.3	32.0	28th	9.0	10th	6	13	12	6	2.63	.085	S.W.
July 16th	−21.0	Jan. 7th	122.4	28.6	54.0	Aug. 8th	4.0	Nov. 20th	162	121	77	102	32.20	.089	S.W.

*1 23d and 27th.

*2 8th and 30th.

*4 16th, 19th and 20th.

STATION NO. 6C.

DR. T. C. HUNTER, OBSERVER,

Napoleon, Henry County, Ohio.

Latitude, 41°22'; Longitude, 84°7'; Elevation, 681.7 feet.

Months.	Mean Barometer.	Highest Barometer.	Date.	Lowest Barometer.	Date.	Range of Barometer.	Mean Relative Humidity.	Mean Temperature.	Highest Temperature.
January.....	30.016	30.607	3d	29.375	23d	1.232	.....	24.2	59.6
February.....	*30.170	30.890	4th	29.164	18th	1.726	.... ..	29.5	58.3
March.....	30.068	30.640	4th	29.336	24th	1.304	.....	33.9	63.0
April.....	29.987	30.518	8th	29.406	28th	1.112	65.0	48.5	81.6
May.....	29.988	30.279	15th	29.659	30th	.620	79.8	65.8	90.0
June.....	29.968	30.374	27th	29.689	22d	.685	77.4	72.4	92.0
July.....	29.953	30.150	14th	29.655	9th	.495	68.8	80.2	100.0
August.....	29.992	30.294	30th	29.751	22d	.543	71.2	71.1	95.0
September.....	30.077	30.389	20th	29.715	6th	.674	78.7	62.4	91.2
October.....	†30.026	30.443	25th	29.585	23d	.858	77.9	47.9	81.0
November.....	30.048	30.822	30th	29.332	19th	1.490	.....	39.2	66.1
December..	30.095	30.832	1st	29.576	31st	1.256	.....	30.8	50.2
Average.....	30.024	30.832	Dec. 1st	29.164	Feb. 18th	1.668	.....	50.5	100.0

* 27 days mean. † 28 days mean.

STATION NO. 6C.

DR. T. C. HUNTER, OBSERVER,

Napoleon, Henry County, Ohio.

Latitude, 41°22'; Longitude, 84°7'; Elevation, 681.7 feet.

Date.	Lowest Temperature.	Date.	Range of Temperature.	Mean Daily Range of Temperature.	Greatest Daily Range of Temperature.	Date.	Least Daily Range of Temperature.	Date.	Number of Clear Days.	Number of Fair Days.	Number of Cloudy Days.	Number of Days on which Rain Fell.	Total Rainfall for Month.	Average Daily Rainfall.	Prevailing Direction of Wind.
23d	−10.8	7th	70.4	17.2	35.3	19th	5.4	31st	4	10	17	16	1.85	.060	S.W
8th	4.3	1st	54.0	.....	31.9	11th	6.0	20th	2	11	14	16	5.46	.202	E.
9th	9.5	29th	53.5	18.4	37.5	1st	8.5	21st	5	16	10	10	1.21	.039	N.W.
11th	14.5	19th	67.1	22.4	42.4	12th	8.8	18th	7	17	6	10	1.92	.064	W.
21st	46.5	19th	43.5	22.3	36.2	21st	6.5	30th	10	15	6	11	2.73	.088	E.
*1	48.6	24th	43.4	20.3	35.4	30th	2.5	10th	14	7	9	11	3.19	.106	W.
17th	52.0	24th	48.0	22.1	29.4	11th	12.0	4th	15	13	3	5	1.33	.043	W.
3d	43.0	29th	52.0	22.2	35.0	9th	8.1	17th	8	13	10	7	1.42	.046	N.E.
13th	28.6	25th	62.6	23.4	36.7	5th	9.3	30th	8	8	14	11	1.12	.037	N.E.
7th	21.8	26th	59.2	18.5	34.0	16th	7.0	9th	10	11	10	9	2.15	.069	W.
7th	11.3	29th	54.8	17.3	32.5	2d	4.0	25th	11	9	10	6	3.10	.103	W.
3d	2.0	28th	48.2	14.1	35.2	28th	5.2	10th	5	12	14	11	2.51	.081	W.
July 17th	−10.8	Jan. 7th	110.8	.....	42.4	April 12th	4.0	Nov. 25th	99	142	123	123	27.99	.077	W.

*1 17th and 30th.

STATION No. 7A.

E. T. M. WILLIAMS, OBSERVER,

Clarksville, Clinton County, Ohio.

Latitude, 39° 25'; Longitude, 84° 12'; Elevation, 1,010 feet.

Months.	Mean Barometer.	Highest Barometer.	Date.	Lowest Barometer.	Date.	Range of Barometer.	Mean Relative Humidity.	Mean Temperature.	Highest Temperature.
January	30.116	30.624	3d	29.480	13th	1.144	79.7	28.5	60.9
February..	30.225	30.733	4th	29.401	18th	1.332	85.9	37.3	63.4
March.....	30.106	30.548	4th	29.479	24th	1.069	76.9	38.9	67.5
April	30.063	30.482	8th	29.525	28th	0.957	68.7	52.0	83.2
May	30.002	30.245	15th	29.722	25th	0.523	75.1	67.1	86.0
June.....	30.030	30.348	27th	29.749	2d	0.599	72.1	71.8	89.3
July	30.007	30.171	1st	29.797	9th	0.374	70.0	78.9	98.8
August	30.031	30.292	31st	29.777	17th	0.493	70.3	72.6	94.7
September..... ..	30.105	30.385	20th	29.780	7th	0.605	72.5	65.1	91.2
October.....	30.118	30.422	25th	29.777	23d	0.645	71.9	50.2	79.4
November..... ..	30.152	30.781	30th	29.490	19th	1.291	72.9	40.9	70.5
December	30.136	30.808	1st	29.686	17th	1.122	81.1	32.9	55.9
Average	30.091	30.808	Dec. 1st.	29.401	Feb. 18th	1.407	74.8	53.0	98.8

STATION No. 7A.

E. T. M. WILLIAMS, OBSERVER,

Clarksville, Clinton County, Ohio.

Latitude, 39° 25'; Longitude, 84° 12'; Elevation, 1,010 feet.

Date.	Lowest Temperature.	Date.	Range of Temperature.	Mean Daily Range of Temperature.	Greatest Daily Range of Temperature.	Date.	Least Daily Range of Temperature.	Date.	Number of Clear Days.	Number of Fair Days.	Number of Cloudy Days.	Number of Days on which Rain fell.	Total Rainfall for Month.	Average Daily Rainfall.	Prevailing Direction of Wind.
22d	—4.2	3d	65.1	15.4	32.7	17th	4.1	15th	7	10	14	17	1.63	.053	S.W.
10th	12.6	13th	50.8	16.4	39.6	11th	2.8	27th	4	9	15	18	7.41	.265	S.W.
2d	16.0	29th	51.5	15.9	31.8	24th	4.1	28th	5	11	15	13	2.90	.094	N.W
13th	24.3	5th	58.9	20.8	33.5	13th	6.5	18th	13	11	6	11	6.23	.208	W.
21st	49.1	27th	36.9	20.0	28.5	1st	8.6	6th	14	13	4	17	2.08	.067	S.E.
30th	47.0	24th	42.3	20.3	28.0	24th	7.1	2d	19	8	3	7	2.41	.080	W.
18th	59.7	11th	39.1	21.6	29.7	30th	13.4	22d	16	11	4	9	1.73	.056	W.
4th	46.0	29th	48.7	20.0	26.9	4th	7.3	17th	12	14	5	8	3.04	.098	N.E.
13th	32.5	21th	58.7	18.5	36.2	9th	2.4	18th	11	13	6	10	1.63	.054	W.
9th	21.3	31st	58.1	20.0	30.0	6th	9.9	1st	17	10	4	4	0.64	.021	N.W.
3d	Zero.	29th	70.5	32.0	39.2	27th	8.4	23d	14	4	12	9	4.33	.144	S.
4th	0.5	29th	55.4	14.1	35.9	28th	4.3	24th	6	8	17	9	2.47	.090	S.E. W.
July 18th	—4.2	Jan. 3d	103.0	19.4	39.6	Feb. 11th	2.4	Sept. 18th	138	122	103	132	36.50	.100	W.

STATION No. 7B.

CHARLES W. RICE, OBSERVER,

Yellow Springs, Greene County, Ohio.

Latitude, 39° 47' 9''; Longitude, 83 51' 19''; Elevation, 1,011 feet.

Months.	Mean Barometer.	Highest Barometer.	Date.	Lowest Barometer.	Date.	Range of Barometer.	Mean Relative Humidity.	Mean Temperature.	Highest Temperature.
January	30.029	30.660	3d	29.365	13th	1.295	81.3	26.2	60.0
February	30.156	30.716	4th	29.257	18th	1.459	88.0	35.0	61.5
March	30.028	30.516	4th	29.328	24th	1.188	78.1	37.4	66.3
April	29.990	30.457	8th	29.379	23th	1.078	71.9	50.5	80.2
May	29.951	30.213	15th	29.650	24th	0.573	75.1	65.8	86.2
June	29.961	30.307	27th	29.69	18th	0.611	71.8	70.7	91.7
July	29.931	30.101	1st	29.662	9th	0.439	69.2	77.8	99.2
August	29.958	30.252	31st	29.727	17th	0.525	69.9	70.7	96.1
September	30.056	30.348	20th	29.693	7th	0.655	69.4	64.5	92.0
October	30.061	30.436	25th	29.666	4th	0.770	65.6	50.8	78.9
November	30.082	30.794	30th	29.399	19th	1.395	74.8	39.3	69.0
December	30.095	30.773	1st	29.591	17th	1.182	83.8	30.9	54.4
Average	30.025	30.794	Nov. 30th	29.257	Feb. 18th	1.537	74.9	51.6	99.3

STATION No. 7B.

CHARLES W. RICE, OBSERVER,
Yellow Springs, Greene County, Ohio.

Latitude, 39° 47' 9"; Longitude, 83° 51' 19"; Elevation, 1,011 feet.

Date.	Lowest Temperature.	Date.	Range of Temperature.	Mean Daily Range of Temperature.	Greatest Daily Range of Temperature.	Date.	Least Daily Range of Temperature.	Date.	Number of Clear Days.	Number of Fair Days.	Number of Cloudy Days.	Number of Days on which Rain Fell.	Total Rainfall for Month.	Average Daily Rainfall.	Prevailing Direction of Wind.
22d	−9.2	11th	69.2	19.0	33.5	17th	6.5	6th	6	12	13	14	2.40	.077	S.W.
11th	10.0	13th	51.5	16.7	31.5	11th	6.4	7th	3	5	20	14	5.83	.210	S.W.
2d	12.7	29th	53.6	18.2	31.0	24th	7.7	15th	5	10	16	8	2.45	.079	N.W.
14th	23.8	5th	56.4	21.3	31.0	10th	7.2	18th	12	13	5	8	4.83	.161	S.W.
20th	46.1	27th	40.1	20.2	29.0	29th	12.4	*1	13	9	9	12	3.30	.106	N.E.
20th	45.0	24th	46.7	23.3	36.6	13th	10.0	2d	13	13	4	6	1.71	.057	S.W.
17th	57.7	11th	41.6	24.0	33.3	12th	14.6	25th	13	12	6	10	1.00	.032	S.W.
4th	40.2	29th	55.9	21.7	39.3	3d	8.2	17th	13	14	4	8	2.42	.073	N.E.
13th	29.5	24th	62.5	21.9	39.7	9th	5.5	18th	8	14	8	8	1.48	.049	N.
7th	19.0	31st	59.9	22.1	35.0	20th	10.8	5th	10	13	8	6	0.45	.014	S.W.
3d	−1.8	29th	70.8	21.8	41.1	27th	7.8	23d	14	4	12	10	3.45	.115	S.W.
4th	−3.3	29th	57.7	17.0	43.3	28th	6.3	24th	3	11	17	9	3.31	.107	S.W.
July 17th	−9.2	Jan. 11th	108.5	20.6	43.3	Dec. 28th	6.3	Dec. 24th	113	180	122	113	32.68	.090	S.W.

*1 6th and 31st.

STATION No. 8.

H. D. GOWEY, OBSERVER,

North Lewisburg, Champaign County, Ohio.

Latitude, 40° 13'; Longitude, 83° 34'; Elevation, 1,030 feet.

Months.	Mean Barometer.	Highest Barometer.	Date.	Lowest Barometer.	Date.	Range of Barometer.	Mean Relative Humidity.	Mean Temperature.	Highest Temperature.
January	30.080	30.700	3d	29.660	20th	1.040	72.1	28.2	64.0
February	30.142	30.750	4th	29.240	18th	1.510	80.5	34.3	60.0
March	30.006	30.520	4th	29.300	24th	1.220	73.3	37.7	66.0
April	29.773	30.400	6th	29.100	28th	1.300	65.6	52.7	86.0
May	29.513	30.050	14th	29.000	23d	1.050	.....	.....	.....
June	29.382	30.050	27th	28.880	18th	1.170	69.9	72.9	95.0
July	29.133	29.800	24th	28.500	18th	1.300	66.5	31.2	102.3
August	29.430	30.140	29th	28.690	5th	1.450	67.6	72.4	99.0
September	29.725	30.280	24th	29.000	13th	1.280	68.7	65.9	94.0
October	29.932	30.420	26th	29.500	3d	0.920	66.1	50.6	83.0
November	29.870	30.760	30th	29.470	19th	1.290	68.8	40.6	68.0
December	30.089	30.700	1st	29.660	17th	1.040	77.8	30.6	58.0
Average .....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Barometer reading from an Aneroid instrument not used in summary.

STATION No. 8.

H. D. GOWEY, OBSERVER,

North Lewisburg, Champaign County, Ohio.

Latitude, 40° 13' ; Longitude, 83° 34' ; Elevation, 1,030 feet.

Date.	Lowest Temperature.	Date.	Range of Temperature.	Mean Daily Range of Temperature.	Greatest Daily Range of Temperature.	Date.	Least Daily Range of Temperature.	Date.	Number of Clear Days.	Number of Fair Days.	Number of Cloudy Days.	Number of Days on which Rain Fell.	Total Rainfall for Month.	Average Daily Rainfall.	Prevailing Direction of Wind.
22d	— 10.0	2d	74.0	17.9	31.0	11th	5.0	23d	6	11	14	11	3.05	.098	S.
11th	8.0	13th	52.0	15.0	36.0	11th	6.0	*1	3	7	18	17	5.60	.200	W.
2d	10.0	30th	56.0	17.3	28.0	30th	8.0	3d	8	11	12	8	2.20	.071	N.W.
14th	25.0	19th	61.0	25.0	41.0	3d	11.0	18th	11	14	5	9	3.70	.123	S.W.
.....
30th	51.0	24th	44.0	22.7	32.0	29th	11.0	2d	14	10	6	7	2.65	.088	W.
17th	53.0	24th	49.3	23.6	34.0	30th	14.0	19th	14	14	3	5	2.05	.066	W.
4th	44.0	29th	55.0	22.1	36.0	4th	9.0	*2	14	8	9	7	3.05	.098	N.
13th	35.0	24th	59.0	22.8	36.0	9th	7.0	27th	8	12	10	11	2.05	.068	W.
7th	20.0	31st	63.0	21.9	38.0	*3	5.0	18th	14	7	10	6	0.45	.014	S.W.
3d	1.0	29th	67.0	20.0	38.0	3d	4.0	20th	15	4	11	7	3.20	.107	S.
4th	— 1.0	29th	59.0	16.4	38.0	28th	6.0	18th	4	10	17	7	2.45	.079	S.W.
.....

*1 21st and 24th. *2 14th, 17th and 18th. *3 16th and 28th.

STATION NO. 9A.

S. M. PAINTER, OBSERVER,

Bangorville, Richland County, Ohio.

Latitude, 40°36'; Longitude, 82°30'; Elevation, 1,250 feet.

Months.	Mean Barometer.	Highest Barometer.	Date.	Lowest Barometer.	Date.	Range of Barometer.	Mean Relative Humidity.	Mean Temperature.	Highest Temperature.
January.....	29.972	30.535	3d	29.554	14th	.981	78.8	23.4	58.5
February.....	30.098	30.662	4th	29.279	18th	1.383	82.1	32.0	60.0
March.....	29.974	30.483	4th	29.526	24th	.957	75.3	32.4	63.5
April.....	29.923	30.384	8th	29.281	18th	1.103	71.7	48.2	83.3
May.....	29.913	30.148	8th	29.636	26th	.512	72.0	64.0	88.0
June.....	29.913	30.244	27th	29.631	2d	.613	75.8	68.4	90.5
July.....	29.886	30.044	1st	29.659	22d	.385	69.9	75.8	97.0
August.....	30.029	30.278	31st	29.738	17th	.540	68.5	68.8	94.5
September.....	30.119	30.406	20th	29.826	7th	.580	74.5	62.0	89.5
October.....	30.024	30.389	25th	29.659	4th	.730	69.6	47.3	80.0
November.....	30.089	30.732	30th	29.349	19th	1.383	72.4	36.7	65.0
December.....	30.046	30.690	1st	29.582	17th	1.108	82.1	23.7	52.7
Average.....	29.999	30.732	Nov. 30th	29.279	Feb. 18th	1.453	74.4	50.6	97.0

STATION NO. 9A.

S. M. PAINTER, OBSERVER,

*Bangorville, Richland County, Ohio.*Latitude, $40^{\circ}36'$; Longitude, $82^{\circ}30'$; Elevation, 1,250 feet.

Date.	Lowest Temperature.	Date.	Range of Temperature.	Mean Daily Range of Temperature.	Greatest Daily Range of Temperature.	Date.	Least Daily Range of Temperature.	Date.	Number of Clear Days.	Number of Fair Days.	Number of Cloudy Days.	Number of Days on which Rain Fell.	Total Rainfall for Month.	Average Daily Rainfall.	Prevailing Direction of Wind.
22d	-12.5	11th	71.0	19.1	38.0	19th	8.0	23d	2	18	11	15	2.04	.066	S.W.
11th	5.0	13th	55.0	18.3	38.0	11th	7.8	27th	1	8	19	18	6.70	.239	S.W.
2d	5.5	29th	58.0	19.3	33.3	2d	7.0	22d	8	8	15	15	2.87	.093	S.W.
14th	17.0	5th	66.3	24.4	40.5	3d	11.2	23d	14	11	5	10	3.12	.104	S.W.
22d	45.2	1st	42.8	21.8	28.5	15th	8.0	31st	10	16	5	16	3.99	.129	N.E.
18th	47.0	24th	43.5	21.3	32.0	4th	9.5	21st	21	9	.....	13	4.52	.151	S.W.
17th	57.8	23d	39.2	23.7	30.0	13th	17.0	22d	16	15	.....	8	2.13	.069	N.E.
4th	46.0	28th	48.5	19.7	27.4	20th	9.8	15th	24	7	.....	9	2.44	.079	N.E.
18th	35.0	24th	54.0	24.9	33.5	4th	5.5	11th	20	10	.....	11	1.51	.050	N.E.
7th	18.5	31st	61.5	23.5	34.2	17th	6.2	5th	27	4	.....	7	0.63	.020	S.W.
7th	1.0	29th	64.0	21.2	34.5	27th	5.0	20th	28	2	.....	9	2.82	.094	S.W.
4th	-2.0	30th	54.7	16.2	40.0	28th	7.2	10th	5	9	17	8	2.04	.066	S.W.
July 17th	-12.5	Jan. 11th	109.5	21.1	40.5	April 3d	5.0	Nov. 20th	176	117	72	139	34.81	.095	S.W.

STATION No. 10A.

A. E. FRASER, PRIVATE Signal Corps U. S. A., OBSERVER,

Toledo, Lucas County, Ohio.

Latitude, 41° 40'; Longitude, 83° 34'; Elevation, 651 feet.

Months.	Mean Barometer.	Highest Barometer.	Date.	Lowest Barometer.	Date.	Range of Barometer.	Mean Relative Humidity.	Mean Temperature.	Highest Temperature.
January	29.990	30.589	3d	29.337	25th	1.252	76.8	21.9	60.0
February.....	30.153	30.841	4th	29.202	18th	1.639	79.8	29.2	57.7
March	30.059	30.672	4th	29.322	24th	1.350	69.0	31.8	59.9
April.....	29.990	30.498	8th	29.324	28th	1.144	62.0	45.8	77.0
May	30.015	30.800	15th	29.660	24th	.640	65.4	63.7	90.9
June	29.932	30.410	27th	29.710	22d	.700	70.5	69.5	92.1
July	29.985	30.180	14th	29.660	9th	.520	66.3	77.2	98.6
August.....	30.022	30.310	31st	29.750	17th	.560	64.9	69.5	96.4
September.....	*30.117	30.430	20th	29.710	7th	.720	72.7	60.8	92.9
October.....	30.070	30.490	25th	29.590	23d	.900	65.2	48.1	81.1
November.....	30.060	30.800	30th	29.290	19th	1.510	69.3	38.6	66.0
December	30.086	30.850	1st	29.560	31st	1.290	79.3	29.0	57.7
Average.....	30.040	30.850	Dec. 1st	29.202	Feb. 18th	1.648	70.1	48.8	98.6

*Mean for 29 days.

STATION No. 10A.

A. E. FRASER, PRIVATE Signal Corps U. S. A., Observer.

Toledo, Lucas County, Ohio.

Latitude, 41° 40'; Longitude, 83° 34'; Elevation, 651 feet.

Date.	Lowest Temperature.	Date.	Range of Temperature.	Mean Daily Range of Temperature.	Greatest Daily Range of Temperature.	Date.	Least Daily Range of Temperature.	Date.	Number of Clear days.	Number of Fair Days.	Number of Cloudy Days.	Number of Days on which Rain fell.	Total Rainfall for Month.	Average Daily Rainfall.	Prevailing Direction of Wind.
23d	-10.3	7th	70.3	16.3	34.0	19th	4.6	31st	4	12	15	19	2.21	.071	S.W.
10th	2.3	1st	55.4	15.0	35.1	11th	6.7	15th	1	15	12	21	6.84	.244	S.W.
2d	7.8	29th	52.1	15.4	32.7	13th	6.9	21st	7	15	9	10	1.12	.036	N.W.
10th	18.4	5th	58.6	19.6	45.3	4th	7.3	18th	5	20	5	13	1.57	.052	S.W.
21st	46.4	26th	44.5	17.9	29.2	20th	7.5	5th	14	12	5	12	1.46	.047	N.E.
17th	48.5	24th	43.6	18.2	26.1	22d	8.4	14th	10	15	5	12	3.26	.109	N.E.
17th	52.1	23d	46.5	20.3	28.6	11th	11.1	14th	16	13	2	8	3.13	.101	N.E.
4th	47.0	29th	49.4	18.5	30.3	8th	7.1	26th	11	13	7	8	1.81	.058	N.E.
13th	34.2	24th	58.7	18.4	31.6	5th	6.8	29th	10	10	10	14	3.37	.112	N.E.
7th	21.4	26th	59.7	17.5	30.5	16th	4.4	5th	7	11	13	11	1.82	.059	S.
7th	10.8	29th	55.2	17.6	38.5	27th	7.6	25th	12	13	5	9	2.64	.088	S.W.
4th	1.8	29th	55.9	13.3	34.2	28th	5.1	8th	4	9	18	11	2.78	.090	S.W.
July 17th	-10.3	Jan. 7th	108.9	17.3	45.3	Apl. 4th	3.1	Dec. 8th	101	158	106	148	31.61	.087	N.E. and S.W.

STATION No. 10B.

B. F. HOUGH, SERGEANT Signal Corps, U. S. A., OBSERVER,

*Sandusky, Erie County, Ohio.*Latitude, $41^{\circ} 25'$; Longitude, $82^{\circ} 40'$; Elevation, 638 feet.

Months.	Mean Barometer.	Highest Barometer.	Date.	Lowest Barometer.	Date.	Range of Barometer.	Mean Relative Humidity.	Mean Temperature.	Highest Temperature.
January	30.004	30.603	3d	29.397	20th	1.206	81.4	23.4	62.4
February	30.159	30.865	4th	29.295	18th	1.570	85.9	30.5	60.5
March	30.065	30.580	4th	29.566	24th	1.014	78.4	31.6	61.9
April	29.996	30.500	8th	29.331	28th	1.169	66.4	45.2	81.1
May	30.011	30.300	15th	29.650	24th	.650	74.4	61.1	91.0
June	30.004	30.380	27th	29.670	22d	.710	72.9	69.2	91.0
July	29.970	30.146	14th	29.678	9th	.470	69.3	77.6	98.0
August	30.017	30.810	31st	29.760	*1	.550	66.3	70.6	97.1
September	30.106	30.410	20th	29.700	7th	.710	72.5	62.8	95.0
October	30.059	30.490	25th	29.600	23d	.890	66.5	49.7	85.0
November	30.068	30.840	30th	29.340	19th	1.500	71.4	39.8	68.9
December	30.096	30.850	1st	29.600	17th	1.250	78.6	30.5	57.9
Average	30.046	30.865	Feb. 4th	29.295	Feb. 18th	1.570	73.8	49.3	98.0

STATION No. 10B.

B. F. HOUGH, SERGEANT Signal Corps, U. S. A., OBSERVER,

Sandusky, Erie County, Ohio.

Latitude, 41° 25' ; Longitude, 82° 40' ; Elevation, 638 feet.

Date.	Lowest Temperature.	Date.	Range of Temperature.	Mean Daily Range of Temperature.	Greatest Daily Range of Temperature.	Date.	Least Daily Range of Temperature.	Date.	Number of Clear Days.	Number of Fair Days.	Number of Cloudy Days.	Number of Days on which Rain Fell.	Total Rainfall for Month.	Average Daily Rainfall.	Prevailing Direction of wind.
22d	— 8.0	11th	70.4	17.2	34.8	17th	7.7	6th	4	11	16	17	1.51	.049	S.W.
8th	8.5	1st	52.0	15.1	34.0	11th	3.9	21st	1	12	15	20	8.53	.305	N.W.
2d	10.9	29th	51.0	12.9	29.7	2d	5.4	21st	8	10	13	12	2.16	.070	N.W.
15th	19.3	5th	61.8	17.8	41.8	4th	5.1	13th	7	19	4	11	2.10	.070	E.
2d	47.0	6th	44.0	15.9	38.9	2d	5.4	14th	14	10	7	10	1.61	.052	E.
17th	48.9	24th	42.1	16.4	26.5	22d	6.6	14th	9	18	3	11	4.44	.148	E.
17th	62.9	23d	35.7	17.2	29.0	30th	3.3	14th	13	15	3	4	0.59	.019	N.E.
5th	49.7	29th	47.4	16.2	26.8	10th	7.3	25th	11	12	8	10	1.57	.051	N.E.
13th	42.0	26th	53.0	16.5	31.0	5th	5.9	18th	10	12	8	12	2.31	.077	N.E.
7th	24.0	26th	61.0	17.9	31.6	16th	4.5	5th	9	10	12	9	.88	.028	S.W.
7th	4.2	29th	64.7	18.5	37.6	27th	5.2	20th	10	13	7	10	2.25	.075	S.W.
4th	1.0	29th	56.9	13.9	37.0	28th	4.2	20th	3	15	13	9	1.90	.061	S.W.
July 17th	— 8.0	Jan. 11th	106.0	16.3	41.8	Apr. 4th	3.9	Feb. 21st	99	157	109	135	29.85	.082	S.W.

*1 17th and 22d.

STATION No. 11A.

JAMES BULL, OBSERVER,

Hanging Rock, Lawrence County, Ohio.

Latitude, 38° 32'; Longitude, 82° 38'; Elevation, 551 feet.

Months.	Mean Barometer.	Highest Birometer.	Date.	Lowest Barometer.	Date.	Range of Barometer.	Mean Relative Humidity.	Mean Temperature.	Highest Temperature
January.....	30.101	30.622	3d	29.498	13th	1.124	78.7	32.3	66.0
February.....	*30.227	30.687	4th	29.473	18th	1.214	84.8	41.2	69.0
March.....	30.067	30.457	4th	29.671	24th	.786	76.2	40.1	72.0
April.....	30.044	30.563	8th	29.508	28th	1.055	74.2	49.7	85.0
May.....	29.993	30.225	15th	29.730	30th	0.495	77.9	65.8	90.0
June.....	30.013	30.294	28th	29.794	1st	0.500	80.9	68.9	95.0
July.....	29.996	30.157	1st	29.827	22d	0.330	79.7	76.4	100.5
August.....	29.997	30.254	31st	29.782	23d	0.572	78.2	70.7	96.0
September.....	30.098	30.343	20th	29.750	7th	0.593	79.4	63.1	94.0
October.....	30.110	30.403	25th	29.813	4th	0.590	74.3	49.3	82.0
November.....	30.155	30.757	30th	29.478	19th	1.279	76.8	39.4	74.0
December.....	30.195	30.772	1st	29.719	17th	1.053	84.5	34.1	59.0
Average.....	30.083	30.772	Dec. 1st	29.473	Feb. 18th	1.299	78.8	53.4	100.5

*24 days mean, except rainfall.

STATION No. 11A.

JAMES BULL, OBSERVER,

Hanging Rock, Lawrence County, Ohio.

Latitude, 38° 32' ; Longitude, 82° 38' ; Elevation, 551 feet.

Date.	Lowest Temperature.	Date.	Range of Temperature.	Mean Daily Range of Temperature.	Greatest Daily Range of Temperature.	Date.	Least Daily Range of Temperature.	Date.	Number of Clear Days.	Number of Fair Days.	Number of Cloudy Days.	Number of Days on which Rain Fell.	Total Rainfall for Month.	Average Daily Rainfall.	Prevailing Direction of Wind.
*1	—3.0	11th	69.0	21.8	40.0	25th	5.0	7th	3	14	14	13	3.11	.100	S.W.
8th	13.0	13th	56.0	18.0	38.0	10th	7.0	16th	4	6	14	15	10.38	.371	S.W.
2d	15.0	30th	57.0	20.1	37.0	2d	8.0	22d	5	12	14	12	1.59	.051	N.W.
13th	24.0	6th	61.0	27.5	44.0	3d	6.0	22d	8	14	8	9	5.93	.198	N.E.
*2	45.0	*3	45.0	27.5	41.0	1st	10.0	31st	15	13	3	6	2.65	.085	N.E.
20th	49.0	24th	46.0	27.1	38.0	14th	10.0	2d	13	12	5	10	3.37	.112	E.
18th	57.0	11th	43.5	25.9	35.0	1st	6.0	8th	6	21	4	10	3.54	.114	S.W.
4th	44.0	30th	52.0	25.6	39.0	31st	13.0	17th	9	17	5	4	2.52	.081	E.
13th	33.0	24th	61.0	27.0	38.0	2d	8.0	18th	4	20	6	9	2.41	.080	N.E.
9th	17.0	31st	65.0	27.2	40.0	7th	15.0	18th	14	11	6	5	0.92	.030	N.W.
27th	7.0	29th	67.0	26.3	41.0	3d	10.0	10th	7	11	12	7	2.02	.067	E.
4th	3.0	30th	56.0	17.6	34.0	28th	7.0	*4	5	8	18	9	2.29	.074	E.
July 18th	—3.0	Jan. 11th	103.5	24.3	44.0	April 3d	5.0	Jan. 7th	93	159	159	109	40.73	.111	E.

*1 22d and 25th.

*2 21st and 22d.

*3 1st and 27th.

*4 15th and 18th.

STATION NO. 11B.

D. B. COTTON, M.D., OBSERVER,

Portsmouth, Scioto County, Ohio.

Latitude, 38°43'56''; Longitude, 83°0'4''; Elevation, 527 feet.

Months.	Mean Barometer.	Highest Barometer.	Date.	Lowest Barometer.	Date.	Range of Barometer.	Mean Relative Humidity.	Mean Temperature.	Highest Temperature.
January	30.098	30.727	3d	29.454	13th	1.273	.....	33.3	72.5
February	30.171	30.661	4th	29.423	18th	1.238	.....	42.0	70.0
March	30.043	30.397	4th	29.560	24th	.837	.....	42.3	75.0
April	30.040	30.474	8th	29.417	28th	1.054	.....	52.5	87.5
May	29.986	30.238	15th	29.594	13th	.644	88.2	67.8	87.0
June ..	30.000	30.453	29th	29.730	18th	.723	88.5	71.4	94.5
July	29.985	30.164	1st	29.826	22d	.338	89.4	77.6	101.0
August	29.970	30.301	31st	29.784	23d	.517	88.3	72.2	96.5
September	30.088	30.353	20th	29.744	7th	.609	88.4	65.2	94.0
October	30.124	30.439	25th	29.754	20th	.685	85.6	51.6	82.0
November	30.161	30.829	30th	29.574	19th	1.255	.....	39.2	75.0
December	30.151	30.786	1st	29.685	*5	1.101	83.8	35.6	62.0
Average	30.068	30.829	Nov. 30th	29.417	April 28th	1.412	.....	54.2	101.0

*5 17th and 31st.

STATION NO. 11B.

D. B. COTTON, M.D., OBSERVER,

Portsmouth, Scioto County, Ohio.

Latitude, 38°43'56'' ; Longitude, 83°0'4'' ; Elevation, 527 feet.

Date.	Lowest Temperature.	Date.	Range of Temperature.	Mean Daily Range of Temperature.	Greatest Daily Range of Temperature.	Date.	Least Daily Range of Temperature.	Date.	Number of Clear Days.	Number of Fair Days.	Number of Cloudy Days.	Number of Days on which Rain Fell.	Total Rainfall for Month.	Average Daily Rainfall.	Prevailing Direction of Wind.
22d	3.0	2d	69.5	17.6	35.5	17th	3.5	21st	5	13	13	11	2.87	.093	S.W.
10th	18.0	13th	52.0	18.1	39.5	11th	5.0	27th	4	9	15	18	10.18	.364	S.W.
2d	18.0	29th	57.0	19.4	36.5	24th	7.0	*1	8	8	15	15	1.94	.063	N.W.
*2	28.5	2d	59.0	26.8	42.5	*3	7.5	17th	10	13	7	10	6.01	.200	S.W.
*4	46.0	1st	41.0	22.2	41.5	1st	4.5	6th	14	13	4	12	1.77	.057	S.W.
20th	53.5	24th	41.0	22.8	33.0	16th	13.0	2d	17	10	3	7	2.88	.096	S.W.
18th	59.0	1st	42.0	21.2	32.0	1st	12.5	25th	15	10	6	11	4.12	.133	S.W.
10th	47.0	29th	49.5	21.5	32.0	31st	6.0	26th	14	12	5	5	1.75	.056	N.W.
13th	37.5	24th	56.5	22.8	39.0	9th	6.0	18th	9	13	8	8	2.09	.070	S.W.
9th	20.5	31st	61.5	24.3	36.0	16th	11.5	30th	17	9	5	3	0.72	.023	S.W.
26th	6.5	29th	68.5	25.5	41.5	22d	6.5	15th	14	9	7	6	2.47	.082	S.E.
*5	6.0	29th	56.0	17.3	36.0	28th	7.0	15th	5	8	18	6	4.24	.137	N.W.
July 18th	3.0	Jan. 2d	104.0	21.6	42.5	April *4	3.5	Jan. 21st	132	127	106	112	41.04	.112	S.W.

*1 15th and 28th.

*2 12th, 13th and 14th.

*3 11th and 12th.

*4 20th, 21st and 22d.

*5 4th, 5th and 6th.

STATION No. 12A.

R. H. MORROW, OBSERVER,

Washington C. H., Fayette County, Ohio.

Latitude, 39° 31'; Longitude, 83° 34'; Elevation, 975 feet.

Months.	Mean Barometer.	Highest Barometer.	Date.	Lowest Barometer.	Date.	Range of Barometer.	Mean Relative Humidity.	Mean Temperature.	Highest Temperature.
January	30.022	30.595	3d	29.425	13th	1.070	.....	27.1	63.5
February.....	†30.164	30.713	13th	29.424	18th	1.289	.....	37.1	64.0
March.....	30.092	30.564	4th	29.483	24th	1.081	.....	37.9	70.0
April	30.051	30.513	8th	29.497	28th	1.016	.....	51.1	84.5
May	30.009	30.239	15th	29.794	30th	.445	76.0	67.0	87.5
June.....	30.052	30.323	26th	29.842	22d	.481	73.6	71.9	94.0
July.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
August	*30.007	30.294	30th	29.752	17th	.542	.....	.....	101.0
September.....	‡30.117	30.379	20th	29.747	7th	.632	.....	65.7	95.5
October	‡30.070	30.452	25th	29.662	20th	.790	.....	50.8	82.5
November.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
December .....	.....	30.760	1st	.....	.....	.....	.....	.....	55.0
Average.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

* Mean for 29 days. † Mean for 27 days. ‡ Mean for 23 days.

STATION No. 12A.

R. H. MORROW, OBSERVER,

Washington C. H., Fayette County, Ohio.

Latitude, 39° 31'; Longitude, 83° 44'; Elevation, 975 feet.

Date.	Lowest Temperature.	Date.	Range of Temperature.	Mean Daily Range of Temperature.	Greatest Daily Range of Temperature.	Date.	Least Daily Range of Temperature.	Date.	Number of Clear Days.	Number of Fair Days.	Number of Cloudy Days.	Number of Days on which Rain fell.	Total Rainfall for Month.	Average Daily Rainfall.	Prevailing Direction of Wind.
22d	−8.0	4th	71.5	19.3	33.0	19th	5.0	6th	6	9	13	12	1.85	.060	S.W.
8th	12.0	13th	52.0	16.7	39.0	11th	3.0	22d	3	7	13	18	5.80	.252	S.W.
2d	13.5	29th	56.5	18.0	33.5	21th	6.0	19th	7	10	14	19	2.19	.071	N.W.
*1	25.0	*2	59.5	24.9	40.0	*3	6.0	18th	10	13	7	11	5.96	.199	W.
22d	45.5	27th	42.0	22.0	33.0	29th	9.5	*4	14	12	5	13	2.27	.073	N.E.
20th	41.0	24th	50.0	24.6	33.0	30th	10.0	2d	16	10	4	10	1.69	.056	S.
.....
4th	43.0	*5	58.0	25.4	33.0	4th	9.5	17th	14	12	5	11	3.15	.102	N.E.
13th	33.0	25th	62.0	26.9	46.5	9th	8.0	18th	7	16	7	17	1.44	.048	N.E.
7th	20.0	22d	62.5	25.9	42.5	16th	10.5	4th	20	7	3	7	0.61	.020	.....
.....
4th	Zero	29th	55.0	15.6	.....	.....	.....	.....	.....	.....	.....	.....	3.66	.118	.....
.....

*1 13th and 14th.

*2 5th and 6th.

*3 3d, 9th and 12th.

*4 6th and 31st.

*5 29th and 30th.

STATION No. 12B.

MR. H. W. OVERMAN, OBSERVER,

Waverly, Pike County, Ohio.

Latitude, 39° 10' ; Longitude, 82° 57' ; Elevation, 612 feet.

Months.	Mean Barometer.	Highest Barometer.	Date.	Lowest Barometer.	Date.	Range of Barometer.	Mean Relative Humidity.	Mean Temperature.	Highest Temperature.
January	30.082	30.677	3d	29.510	13th	1.167	82.7	29.0	64.5
February.....*	30.228	30.719	4th	29.393	18th	1.326	89.7	40.3	68.0
March	30.056	30.504	4th	29.375	24th	1.129	81.4	39.2	57.8
April	30.009	30.463	9th	29.441	28th	1.022	74.6	51.3	84.3
May	29.997	30.246	15th	29.723	26th	.523	79.2	66.2	89.0
June.....	29.998	30.287	27th	29.720	22d	.567	76.6	70.9	96.8
July	29.971	30.146	1st	29.778	22d	.368	77.2	77.9	102.0
August									
September.....	30.083	30.389	20th	29.749	7th	.560	75.8	65.7	95.0
October									82.0
November.....	30.138	30.770	30th	29.432	19th	1.338	72.0	38.6	70.5
December	30.151	30.800	1st	29.645	17th	1.155	81.2	32.7	58.3
Average									

* First 25 days mean.

STATION No. 12B.

MR. H. W. OVERMAN, OBSERVER,
Waverly, Pike County, Ohio.

Latitude, 39° 10'; Longitude, 82° 57'; Elevation, 612 feet.

Date.	Lowest Temperature.	Date.	Range of Temperature.	Mean Daily Range of Temperature.	Greatest Daily Range of Temperature.	Date.	Least Daily Range of Temperature.	Date.	Number of Clear Days.	Number of Fair Days.	Number of Cloudy Days.	Number of Days on which Rain fell.	Total Rainfall for Month.	Average Daily Rainfall.	Prevailing Direction of Wind.
22d	−10.0	11th	74.5	21.0	38.8	27th	5.0	6th	5	17	9	14	2.14	.069	S.W.
8th	5.0	28th	63.0	17.4	38.8	11th	5.7	20th	3	5	17	18	0.62	.344	S.W.
2d	14.0	29th	43.8	21.0	36.0	2d	8.3	22d	9	7	15	15	1.60	.052	S.W.
13th	23.4	5th	60.9	26.7	44.0	11th	5.5	16th	17	7	6	10	6.87	.229	W.
20th	41.0	1st	48.0	26.2	48.0	1st	13.7	6th	14	14	3	15	1.28	.041	W.
20th	48.5	13th	48.3	26.4	38.8	30th	15.0	*1	18	8	4	10	2.70	.090	S.W.
17th	56.8	11th	45.2	25.8	35.5	2d	14.0	25th	13	17	1	11	3.57	.115	S.W.
.....
18th	30.9	24th	65.0	25.6	47.0	9th	11.0	18th	11	14	5	11	1.94	.065	W.
9th	11.5	31st	70.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.36	.012	.....
3d	− 1.5	29th	72.0	25.9	44.2	3d	7.5	25th	19	5	6	6	2.91	.097	W.
4th	Zero	30th	58.3	16.4	33.0	28th	4.7	8th	5	9	17	7	3.25	.105	W.
.....

*1 2d and 10th.

STATION No. 12C.

DR. THOS. W. GORDON, OBSERVER,

Georgetown, Brown County, Ohio.

Latitude, 38° 52'; Longitude, 83° 47'; Elevation, 940 feet.

Months.	Mean Barometer.	Highest Barometer.	Date.	Lowest Barometer.	Date.	Range of Barometer.	Mean Relative Humidity.	Mean Temperature.	Highest Temperature.
January	30.102	30.671	3d	29.478	13th	1.193	.....	29.2	65.0
February	30.205	30.675	4th	29.424	18th	1.251	89.1	39.5	69.2
March	30.055	30.496	4th	29.580	24th	.916	77.2	41.0	60.0
April	30.010	30.425	8th	29.500	28th	.925	78.5	52.6	88.0
May	29.985	30.196	15th	29.740	31st	.456	78.9	68.0	93.0
June	30.008	30.298	27th	29.721	22d	.577	81.5	72.7	97.0
July	29.975	30.165	1st	29.722	9th	.443	79.0	79.2	103.0
August	29.998	30.248	31st	29.720	17th	.528	.....	73.8	101.5
September	30.082	30.355	20th	29.738	7th	.617	81.9	67.3	98.0
October.....	30.108	30.404	25th	29.768	20th	.636	80.0	51.8	83.0
November.....	30.143	30.737	30th	29.482	19th	1.255	81.8	41.1	74.0
December	30.149	30.764	1st	29.655	17th	1.109	86.3	33.4	55.0
Average	30.068	30.764	Dec. 1st	29.424	Feb. 18th.	1.340	.....	54.1	103.0

STATION No. 12C.

DR. THOS. W. GORDON, OBSERVER,

Georgetown, Brown County, Ohio.

Latitude, 38° 52'; Longitude, 83° 47'; Elevation, 940 feet.

Date.	Lowest Temperature.	Date.	Range of Temperature.	Mean Daily Range of Temperature.	Greatest Daily Range of Temperature.	Date.	Least Daily Range of Temperature.	Date.	Number of Clear Days.	Number of Fair Days.	Number of Cloudy Days.	Number of Days on which Rain Fell.	Total Rainfall for Month.	Average Daily Rainfall.	Prevailing Direction of Wind.
22d	—7.0	3d	72.0	19.4	36.0	19th	8.0	14th	2	13	16	11	2.50	.081	S.W.
8th	12.0	13th	57.2	18.0	45.0	11th	5.0	26th	3	8	17	15	9.96	.356	S.E.
*1	14.0	29th	46.0	22.4	35.5	24th	6.5	19th	7	11	13	11	1.63	.053	N.W.
13th	24.0	2d	64.0	26.0	42.0	*2	6.5	7th	11	11	8	12	8.28	.276	S.
20th	49.0	28th	44.0	23.2	35.5	1st	6.0	26th	11	15	5	15	3.39	.109	N.E.
20th	48.0	24th	49.0	25.6	37.0	30th	14.2	9th	14	10	6	10	3.96	.132	S.W.
18th	61.5	1st	41.5	23.3	34.0	1st	11.0	6th	13	14	4	9	1.60	.052	S.E.
4th	49.0	29th	52.5	26.7	38.0	31st	13.5	22d	10	16	5	6	2.66	.086	N.E.
13th	34.0	24th	64.0	25.3	41.0	9th	5.0	18th	8	14	8	9	3.11	.104	S.E.
9th	21.0	31st	62.0	25.4	37.0	16th	15.5	21st	20	7	4	4	1.01	.033	N.W.
3d	6.0	29th	68.0	24.5	40.0	6th	8.0	23d	11	6	13	9	3.41	.114	S.
4th	2.0	29th	53.0	17.2	38.5	28th	5.0	8th	4	11	16	9	2.84	.081	S.W.
July 18th	—7.0	Jan. 3d	110.0	23.1	45.0	Feb. 11th	5.0	*3	114	136	115	120	44.35	.121	*4

*1 2d and 7th. *2 11th and 13th. *3 February 20th; September 18; December 8th.
*4 S.E. and S.W.

STATION No. 13A.

ORIN PARKER, SERGEANT Signal Corps U. S. A., OBSERVER,

Columbus, Franklin County, Ohio.

Latitude, 39° 58'; Longitude, 83° 0'; Elevation, 812 feet.

Months.	Mean Barometer.	Highest Barometer.	Date.	Lowest Barometer.	Date.	Range of Barometer.	Mean Relative Humidity.	Mean Temperature.	Highest Temperature.
January	30.034	30.611	3d	29.435	13th	1.176	69.8	26.8	66.0
February.....	30.164	30.749	4th	29.319	11th	1.430	74.4	36.1	63.9
March	30.037	30.572	4th	29.395	24th	1.127	66.7	37.0	68.2
April	29.997	30.476	8th	29.371	28th	1.105	59.6	51.2	83.1
May	29.989	30.250	15th	29.670	24th	.580	64.8	67.4	89.6
June	30.000	30.350	27th	29.690	22d	.660	64.6	71.7	90.8
July ..	29.970	30.140	1st	29.710	9th	.430	63.0	80.0	100.0
August	29.993	30.270	*2	29.700	17th	.570	59.5	72.5	97.4
September	30.085	30.400	20th	29.670	7th	.730	62.8	66.0	92.9
October.....	30.074	30.455	25th	29.695	20th	.760	61.4	51.3	83.2
November.....	30.110	30.830	30th	29.410	19th	1.420	67.2	41.4	73.8
December	30.109	30.810	1st	29.630	17th	1.180	72.5	33.0	56.6
Average	30.046	30.830	Nov. 30th	29.319	Feb. 11th	1.511	65.5	52.9	100.0

*2 30th and 31st.

STATION No. 13A.

ORIN PARKER, SERGEANT Signal Corps U. S. A., OBSERVER,
Columbus, Franklin County, Ohio.

Latitude, 39° 58'; Longitude, 83° 0'; Elevation, 812 feet.

Date.	Lowest Temperature.	Date.	Range of Temperature.	Mean Daily Range of Temperature.	Greatest Daily Range of Temperature.	Date.	Least Daily Range of Temperature.	Date.	Number of Clear Days.	Number of Fair Days.	Number of Cloudy Days.	Number of Days on which Rain fell.	Total Rainfall for Month.	Average Daily Rainfall.	Prevailing Direction of Wind.
22d	—5.0	*1	71.0	18.6	35.2	17th	8.4	15th	3	15	13	19	2.35	.076	S.
11th	12.8	13th	51.1	16.4	39.2	11th	5.1	20th	2	11	15	21	6.48	.231	S.
2d	13.8	29th	54.4	16.4	30.9	24th	7.5	19th	3	12	16	13	2.56	.083	N.W.
14th	23.8	5th	59.3	21.5	37.5	9th	7.1	18th	8	16	6	8	3.44	.115	S.W.
22d	49.5	25th	40.1	20.1	27.8	15th	8.1	31st	11	14	6	12	2.97	.096	N.E.
20th	49.0	24th	41.8	20.2	27.0	13th	8.9	2d	12	13	5	9	2.82	.094	S.W
17th	61.0	12th	39.0	22.0	34.0	12th	12.0	25th	11	17	3	9	1.45	.047	S.
4th	41.9	29th	45.5	22.6	33.8	8th	9.8	24th	12	14	5	10	2.21	.071	N.E.
13th	35.7	24th	57.2	22.9	39.7	5th	8.2	*3	6	16	8	10	1.35	.045	N.
7th	20.1	31st	63.1	20.9	34.2	31st	10.2	5th	12	13	6	5	0.30	.010	S.
3d	3.0	29th	70.8	19.0	37.4	2d	4.0	23d	11	8	11	10	2.45	.082	S.
4th	0.6	29th	56.0	14.3	37.4	28th	6.0	18th	4	11	16	14	1.87	.060	*4
July 17th	—5.0	*1	105.0	19.6	39.7	Sept. 5th	4.0	Nov. 23d	95	160	110	140	30.25	.083	S.

*1 2d and 11th.

*3 7th and 28th.

*4 S. and W.

STATION No. 13B.

MOSES CRAIG, OBSERVER,

Ohio State University, Franklin County, Ohio.

Latitude, 40° 0' 02''; Longitude, 83° 0' 25'' ; Elevation, 757 feet.

Months.	Mean Barometer.	Highest Barometer.	Date.	Lowest Barometer.	Date.	Range of Barometer.	Mean Relative Humidity.	Mean Temperature.	Highest Temperature.
January	30.057	30.597	3d	29.486	13th	1.111	90.1	25.4	65.0
February	30.173	30.749	4th	29.362	18th	1.387	89.2	35.6	63.0
March	30.061	30.566	4th	29.358	24th	1.208	76.5	36.1	70.0
April	30.013	30.480	8th	29.395	28th	1.085	70.6	48.2	87.0
May	20.010	30.342	6th	29.690	24th	0.652	75.8	66.3	92.3
June.....	29.982	30.328	27th	29.694	22d	0.634	75.9	70.7	94.3
July.....	29.965	30.132	1st	29.734	9th	0.398	70.9	75.5	102.5
August	29.989	30.261	31st	29.645	17th	0.616	77.0	70.8	101.0
September	30.082	30.365	20th	29.714	7th	0.651	76.1	64.4	92.5
October.....	30.082	30.420	25th	29.725	20th	0.695	77.7	47.9	82.0
November.....	30.110	30.795	30th	29.437	19th	1.358	84.8	37.6	71.0
December	30.134	30.824	1st	29.626	17th	1.198	86.4	30.7	55.0
Average	30.055	30.824	Dec. 1st	29.358	Mar. 24th	1.466	79.2	50.8	102.5

STATION No. 13B.

MOSES CRAIG, OBSERVER,

Ohio State University, Franklin County, Ohio.

Latitude, 40° 0' 02'' ; Longitude, 83° 0' 25'' ; Elevation, 757 feet.

Date.	Lowest Temperature.	Date.	Range of Temperature.	Mean Daily Range of Temperature.	Greatest Daily Range of Temperature.	Date.	Least Daily Range of Temperature.	Date.	Number of Clear Days.	Number of Fair Days.	Number of Cloudy Days.	Number of Days on which Rain Fell.	Total Rainfall for Month.	Average Daily Rainfall.	Prevailing Direction of Wind.
22d	—10.0	11th	75.0	20.2	36.7	26th	8.5	6th	3	13	15	21	1.54	.050	S.W.
11th	10.0	13th	53.0	18.1	39.0	11th	6.8	16th	2	7	19	19	6.85	.209	S.W.
2d	9.0	30th	61.0	19.2	36.5	2d	7.0	26th	6	9	16	15	2.84	.092	N.W.
13th	19.3	6th	67.7	29.4	50.0	9th	8.7	22d	6	16	8	9	4.45	.148	S.W.
22d	44.3	29th	48.0	26.1	38.0	29th	10.0	31st	13	9	9	16	4.36	.141	N.
18th	42.7	24th	41.6	26.6	38.5	30th	11.2	2d	11	12	7	10	5.47	.182	S.W.
17th	54.0	12th	48.5	29.5	42.5	30th	18.0	25th	11	14	6	11	1.56	.050	S.W.
4th	39.0	29th	62.0	28.8	43.0	8th	13.0	14th	11	13	7	11	2.47	.080	N.E.
5th	33.0	26th	59.5	25.0	47.5	5th	7.5	28th	8	10	12	16	1.82	.061	N.E.
7th	15.5	31st	66.5	25.1	45.0	16th	5.5	5th	14	9	8	6	0.38	.012	S.W.
3d	—8.0	29th	79.0	24.5	46.5	2d	7.5	20th	10	9	11	11	2.84	.095	S.W.
4th	—1.0	30th	56.0	16.2	39.0	28th	3.0	12th	3	9	19	13	2.04	.066	S.E.
July 17th	—10.0	Jan. 11th	112.5	24.1	47.5	Sept. 5th	3.0	Dec. 12th	93	130	137	158	36.62	.100	S.W.

STATION No. 13C.

PROF. JOHN HAYWOOD, OBSERVER,

Westerville, Franklin County, Ohio.

Latitude, 40° 8'; Longitude, 83°; Elevation, 850 feet.

[illegible]

STATION No. 13C.

PROF. JOHN HAYWOOD, OBSERVER,

Westerville, Franklin County, Ohio.

Latitude, 40° 8'; Longitude, 83°; Elevation, 850 feet.

Date.	Lowest Temperature.	Date.	Range of Temperature.	Mean Daily Range of Temperature.	Greatest Daily Range of Temperature.	Date.	Least Daily Range of Temperature.	Date.	Number of Clear Days.	Number of Fair Days.	Number of Cloudy Days.	Number of Days on which Rain Fell.	Total Rainfall for Month.	Average Daily Rainfall.	Prevailing Direction of Wind.
22d	−9.5	7th	71.5	20.2	32.5	26th	9.0	6th	4	12	13	8	1.81	.058	S.
11th	11.0	13th	46.5	16.1	26.0	25th	5.0	16th	4	6	18	12	4.37	.156	S.W.
2d	11.0	30th	54.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.39	.077	.....
*1	22.5	5th	58.5	24.8	42.0	9th	8.0	22d	11	14	5	6	4.06	.135	S.
20th	46.0	*2	42.0	23.6	36.0	29th	7.0	31st	13	12	6	10	1.74	.056	N.E.
18th	44.5	24th	46.5	23.1	36.5	13th	11.5	2d	.....	.....	.....	8	2.85	.095	S.
.....
.....
.....
7th	17.0	31st	62.5	22.5	39.5	16th	4.5	5th	14	8	9	5	0.40	.013	S.W.
3d	−8.0	29th	76.0	21.8	45.0	7th	7.0	15th	14	5	11	8	3.00	.100	S.W.
4th	−1.0	.....	55.0	.....	24.5	6th	9.0	*3	.....	.....	.....	5	2.34	.075	.....
.....

*1 13th and 14th.

*2 15th and 29th.

*3 11th, 12th and 19th.

STATION No. 13D.

DR. JAMES LITTLE, OBSERVER,

Logan, Hocking Coun'y, Ohio.

Latitude, 39° 35' ; Longitude, 82° 19' ; Elevation, 730 feet.

Months.	Mean Barometer.	Highest Barometer.	Date.	Lowest Barometer.	Date.	Range of Barometer.	Mean Relative Humidity.	Mean Temperature.	Highest Temperature.
January.....	30.065	30.548	3d	29.568	13th	0.980	87.3	28.7	67.5
February.....	30.184	30.724	4th	29.398	18th	1.326	87.5	37.9	66.0
March.....	30.056	30.493	4th	29.635	24th	.858	78.6	38.8	73.0
April.....	30.009	30.467	8th	29.345	18th	1.122	69.3	49.9	89.0
May.....	29.970	30.203	3d	29.685	30th	.518	72.7	66.8	93.0
June.....	29.989	30.300	27th	29.727	22d	.573	74.2	69.2	96.0
July.....	29.953	30.173	1st	29.749	22d	.424	77.1	76.8	104.2
August.....	29.988	30.246	31st	29.698	17th	.548	74.8	72.6	101.2
September.....	30.077	30.368	20th	29.754	7th	.614	76.2	65.6	97.0
October.....	30.082	30.392	25th	29.716	4th	.676	73.3	49.8	89.8
November.....	30.121	30.752	30th	29.428	19th	1.324	76.0	38.7	72.0
December.....	30.140	30.784	1st	29.629	17th	1.155	88.0	32.8	58.0
Average.....	30.053	30.784	Dec. 1st	29.398	Feb. 18th	1.386	77.9	52.3	104.2

STATION No. 13D.

DR. JAMES LITTLE, OBSERVER,

Logan, Hocking County, Ohio.

Latitude, 39° 35'; Longitude, 82° 19'; Elevation, 730 feet.

Date.	Lowest Temperature.	Date.	Range of Temperature.	Mean Daily Range of Temperature.	Greatest Daily Range of Temperature.	Date.	Least Daily Range of Temperature.	Date.	Number of Clear Days.	Number of Fair Days.	Number of Cloudy Days.	Number of Days on which Rain Fell.	Total Rainfall for Month.	Average Daily Rainfall.	Prevailing Direction of Wind.
22d	—13.2	11th	80.7	18.1	42.0	19th	1.0	15th	8	9	14	8	1.88	.045	S.W.
11th	11.5	13th	54.5	16.6	38.0	18th	4.5	20th	3	5	20	16	7.62	.272	W.
2d	12.5	30th	60.5	18.5	41.5	2d	4.0	*1	6	9	16	10	1.87	.060	N.W.
13th	21.5	6th	67.5	26.5	51.5	3d	4.5	16th	11	13	6	12	6.70	.223	N.W.
22d	45.0	*2	48.0	28.1	39.0	*2	5.5	31st	13	11	7	10	2.60	.084	N.E.
18th	48.5	24th	47.5	26.2	38.5	15th	9.0	2d	18	5	7	9	6.16	.205	E.
18th	59.9	*3	47.7	26.4	38.0	30th	10.5	8th	15	10	6	10	3.90	.126	S.E.
4th	41.0	29th	60.2	28.4	49.0	9th	9.0	24th	12	13	6	8	2.59	.084	N.E.
13th	37.0	24th	60.0	26.7	51.0	5th	2.0	11th	5	17	8	7	1.82	.061	N.E.
7th	15.0	31st	74.8	28.7	49.8	7th	6.0	5th	15	10	6	3	0.78	.025	N.W.
3d	0.5	29th	71.5	26.7	48.0	6th	5.5	20th	15	5	10	7	3.28	.109	S.E.
4th	1.3	50th	56.7	16.4	32.0	*4	5.0	15th	4	11	16	6	1.66	.054	S.E.
July 18th	—13.2	Jan. 11th	117.4	23.9	49.8	Oct. 7th	1.0	Jan. 15th	125	118	122	106	40.36	.111	*5

*1 3d and 21st. *2 1st and 29th. *3 12th and 13th. *4 6th and 28th. *5 N.E., S.E. and N.W.

STATION No. 14.

PROF. F. F. JEWETT, OBSERVER,

Oberlin, Lorain County, Ohio.

Latitude, 41° 19' ; Longitude, 82° 13' ; Elevation, 855 feet.

Months.	Mean Barometer.	Highest Barometer.	Date.	Lowest Barometer.	Date.	Range of Barometer.	Mean Relative Humidity.	Mean Temperature.	Highest Temperature.
January	29.861	30.415	3d	29.332	13th	1.083	85.6	24.8	60.1
February.....	30.053	30.626	4th	29.254	26th	1.372	84.1	32.3	57.0
March	29.940	30.410	4th	29.326	24th	1.074	83.3	32.1	67.0
April	29.867	30.350	8th	29.193	28th	1.157	85.0	46.2	76.0
May	29.861	30.218	5th	29.512	24th	.706	83.0	62.8	86.0
June	29.712	30.086	27th	29.387	22d	.699	84.8	68.4	90.3
July	29.837	29.995	1st	29.574	22d	.421	72.3	76.6	98.0
August	29.996	30.280	31st	29.723	17th	.557	69.9	68.1	97.0
September.....	30.093	30.359	20th	29.691	7th	.668	77.8	60.7	91.0
October.....	30.066	30.451	25th	29.683	20th	.768	75.3	48.2	.....
November	30.086	30.811	30th	29.361	19th	1.450	84.0	38.8	.....
December	30.123	30.900	1st	29.658	17th	1.242	92.4	30.3	56.0
Average.....	29.958	30.900	Dec. 1st	29.193	Apl. 28th	1.707	81.5	49.1	98.0

STATION No. 14.

PROF. F. F. JEWETT, OBSERVER,

Oberlin, Lorain County, Ohio.

Latitude, 41° 19' ; Longitude, 82° 13' ; Elevation, 855 feet.

Date.	Lowest Temperature.	Date.	Range of Temperature.	Mean Daily Range of Temperature.	Greatest Daily Range of Temperature.	Date.	Least Daily Range of Temperature.	Date.	Number of Clear Days.	Number of Fair Days.	Number of Cloudy Days.	Number of Days on which Rain Fell.	Total Rainfall for Month.	Average Daily Rainfall.	Prevailing Direction of Wind.
22d	— 11.0	8th	71.1	18.2	33.0	19th	5.5	26th	3	12	16	7	2.00	.065	W.
11th	10.2	4th	46.8	16.1	35.9	11th	5.2	16th	2	9	17	7	3.05	.109	N.W.
2d	10.4	29th	56.6	15.1	34.0	2d	4.2	10th	10	7	14	6	1.55	.050	N.W.
14th	18.9	5th	57.1	21.0	38.4	14th	7.7	29th	5	16	9	7	1.13	.038	S.W.
21st	42.0	5th	44.0	21.0	36.3	2d	7.8	31st	11	8	12	8	3.74	.121	N.
30th	50.0	*1	40.3	19.4	33.3	30th	4.5	10th	9	15	6	10	5.59	.186	W.
17th	56.8	14th	41.2	23.5	34.7	13th	9.7	9th	16	13	2	3	0.61	.020	N.
4th	44.2	31st	52.8	23.0	37.0	4th	10.6	17th	12	11	8	10	2.24	.072	N.
18th	29.0	25th	62.0	21.4	37.1	5th	8.0	23d	8	10	12	10	2.20	.073	N.W.
.....	.....	.....	.....	.....	.....	.....	.....	.....	9	8	14	4	0.63	.020	S.W.
.....	2.0	29th	.....	.....	.....	.....	.....	.....	8	8	14	7	1.79	.060	S.W.
*2	Zero.	30th	56.0	15.0	36.0	28th	5.0	25th	4	6	21	2	1.11	.036	W.
July 17th	— 11.0	Jan. 8th	109.0	.....	.....	.....	.....	.....	97	123	145	81	25.64	.070	W. S.W. N.W.

*1 25th and 28th.

*2 2d and 4th.

STATION No. 15A.

PROF. T. D. BISCOE, OBSERVER,

Marietta, Washington County, Ohio.

Latitude, 39° 25'; Longitude, 81° 28'; Elevation, 640 feet.

Months.	Mean Barometer.	Highest Barometer.	Date.	Lowest Barometer.	Date.	Range of Barometer.	Mean Relative Humidity.	Mean Temperature.	Highest Temperature.
January.....	30.102	30.681	3d	29.594	13th	1.087	72.9	31.5	67.4
February.....	†30.236	30.777	4th	29.457	18th	1.320	77.4	40.7	66.0
March.....	30.071	30.560	4th	29.559	24th	1.001	66.9	39.7	72.3
April.....	30.032	30.525	8th	29.876	18th	1.149	65.6	52.4	87.0
May.....	30.005	30.271	15th	29.693	26th	.578	69.1	68.5	88.0
June.....	30.022	30.351	27th	29.720	22d	.631	77.8	71.7	91.6
July.....	†29.884	30.185	1st	29.756	9th	.430	68.8	79.6	100.0
August.....	29.991	30.303	30th	29.739	17th	.564	69.2	72.9	96.1
September.....	30.109	30.406	20th	29.726	7th	.680	69.9	66.1	93.5
October.....	30.115	30.442	25th	29.755	4th	.667	69.6	50.7	80.0
November.....	30.156	30.820	30th	29.410	19th	1.410	73.3	40.4	73.7
December.....	*30.215	30.837	1st	29.646	17th	1.191	81.2	32.7	59.0
Average.....	30.071	30.837	Dec. 1st	29.376	April 18th	1.461	71.8	53.9	100.0

* Mean for 30 days. † Barometer for 27 days. ‡ Barometer for 29 days.

STATION No. 15A.

PROF. T. D. BISCOE, OBSERVER,

Marietta, Washington County, Ohio.

Latitude, 39° 25'; Longitude, 81° 28'; Elevation, 640 feet.

Date.	Lowest Temperature.	Date.	Range of Temperature.	Mean Daily Range of Temperature.	Greatest Daily Range of Temperature.	Date.	Least Daily Range of Temperature.	Date.	Number of Clear Days.	Number of Fair Days.	Number of Cloudy Days.	Number of Days on which Rain Fell.	Total Rainfall for Month.	Average Daily Rainfall.	Prevailing Direction of Wind.
22d	-5.0	4th	72.4	21.8	35.0	19th	9.0	15th	2	11	18	8	2.54	.082	S.W.
8th	13.5	13th	52.5	19.4	39.0	11th	8.0	22d	3	7	18	13	7.57	.270	S.W.
2d	12.5	29th	59.8	20.2	39.1	2d	6.9	22d	4	10	17	10	1.38	.045	N.W.
13th	23.0	6th	64.0	27.4	43.6	3d	9.4	22d	11	11	8	9	5.65	.188	W.
21st	43.5	1st	44.5	24.7	38.7	1st	12.1	24th	8	14	9	10	3.07	.099	W.
19th	50.1	12th	41.5	22.8	33.5	28th	9.5	2d	10	11	9	9	5.81	.194	S.W.
18th	60.1	11th	39.9	22.1	29.1	1st	11.0	8th	11	16	4	9	1.12	.033	S.W.
10th	46.0	29th	50.1	23.4	35.8	8th	12.5	18th	10	15	6	7	2.56	.083	N.W.
13th	38.0	26th	55.5	22.8	40.1	5th	10.9	10th	8	12	10	7	2.30	.077	N.
9th	17.0	31st	63.0	31.9	36.9	17th	9.0	5th	11	10	10	3	0.65	.021	N.W.
27th	10.2	29th	63.5	22.7	37.8	3d	6.9	11th	8	13	9	6	2.19	.073	S.W.
4th	5.2	29th	53.8	16.9	38.7	28th	5.6	25th	3	11	16	7	2.48	.080	S.W.
July 18th	-5.0	Jan. 4th	105.0	23.0	43.6	April 3d	5.6	Dec. 25th	89	141	134	98	37.32	.102	S.W.

STATION No. 15B.

C. H. MORRIS, OBSERVER.

McConnelsville, Morgan County, Ohio.

Latitude, 39° 50'; Longitude, 81° 40'; Elevation, 704 feet.

Months.	Mean Barometer.	Highest Barometer.	Date.	Lowest Barometer.	Date.	Range of Barometer.	Mean Relative Humidity.	Mean Temperature.	Highest Temperature.
January	30.083	30.630	3d	29.615	13th	1.015	80.0	29.3	74.9
February	30.176	30.727	4th	29.413	18th	1.314	83.3	38.9	64.8
March	30.060	30.550	4th	29.380	24th	1.170	79.5	38.4	72.4
April'	30.012	30.518	8th	29.428	28th	1.090	72.6	50.1	86.8
May	29.997	30.263	15th	29.702	30th	0.561	73.6	67.6	89.9
June	30.001	30.372	27th	29.717	22d	0.655	78.5	74.9	93.0
July	29.978	30.252	1st	29.742	9th	0.510	70.6	78.9	102.0
August	29.982	30.291	31st	29.665	17th	0.626	70.0	74.0	99.0
September	30.105	30.400	20th	29.716	7th	0.684	70.2	66.2	96.8
October	30.106	30.438	25th	29.721	4th	0.717	66.0	52.6	82.9
November.....	30.150	30.826	30th	29.455	19th	1.371	69.4	39.8	72.2
December	30.168	30.794	1st	29.649	17th	1.145	77.3	32.5	58.3
Average	30.068	30.826	Nov. 30th	29.380	Mch. 24th	1.446	74.2	53.6	102.0

STATION No. 15B.

C. H. MORRIS, OBSERVER.

McConnelsville, Morgan County, Ohio.

Latitude, 39° 50'; Longitude, 81° 40'; Elevation, 704 feet.

Date.	Lowest Temperature.	Date.	Range of Temperature.	Mean Daily Range of Temperature.	Greatest Daily Range of Temperature	Date.	Least Daily Range of Temperature.	Date.	Number of Clear Days.	Number of Fair Days.	Number of Cloudy Days.	Number of Days on which Rain fell.	Total Rainfall for Month.	Average Daily Rainfall.	Prevailing Direction of Wind.
22d	—5.0	11th	79.9	18.2	36.2	22d	5.2	7th	6	5	20	8	1.74	0.056	W.
8th	10.9	13th	53.9	19.7	36.8	10th	5.3	27th	2	2	24	21	6.94	0.241	W.
2d	11.5	30th	60.9	19.7	35.2	27th	4.2	3d	7	2	22	13	1.76	0.057	N.
13th	19.7	6th	67.1	28.1	48.5	3d	4.1	4th	9	4	17	9	5.86	0.195	W.
21st	42.9	1st	47.0	27.5	38.5	30th	12.1	7th	13	9	9	13	3.40	0.110	S.
30th	47.3	24th	45.7	25.6	36.3	28th	15.5	1st	12	8	10	9	4.35	0.145	S.W.
18th	58.6	12th	43.9	24.8	34.4	15th	15.1	9th	11	9	11	13	3.62	0.117	W.
10th	42.5	28th	56.5	28.3	46.5	29th	10.3	24th	15	7	9	9	0.55	0.018	S.
13th	35.4	26th	61.4	28.1	48.3	5th	9.9	28th	12	5	13	10	1.65	0.055	W.
9th	14.8	31st	68.1	25.9	45.3	16th	2.1	24th	13	4	14	4	0.52	0.017	N.W.
27th	3.9	29th	68.3	.....	.....	.....	.....	.....	10	3	17	8	2.74	0.091	N.
5th	3.2	30th	55.1	16.6	41.2	5th	3.0	11th	7	3	21	6	2.15	0.069	W.
July 18th	—5.0	Jan. 11th	107.0	23.9	48.5	Apl. 3d	3.0	Dec. 11th	117	61	187	123	35.28	0.097	W.

STATION No. 15C.

DR. D. N. ALLARD, OBSERVER.

Pomeroy, Meigs County, Ohio.

Latitude, 38° 18'; Longitude, 81° 50'; Elevation, 640 feet.

[illegible]

STATION No. 15C.

DR. D. N. ALLARD, OBSERVER.

Pomeroy, Meigs County, Ohio.

Latitude, 38° 18'; Longitude, 81° 50'; Elevation, 640 feet.

Date.	Lowest Temperature.	Date.	Range of Temperature.	Mean Daily Range of Temperature.	Greatest Daily Range of Temperature.	Date.	Least Daily Range of Temperature.	Date.	Number of Clear Days.	Number of Fair Days.	Number of Cloudy Days.	Number of Days on which Rain Fell.	Total Rainfall for Month.	Average Daily Rainfall.	Prevailing Direction of Wind.
.....
11th	17.0	1st	48.0	16.7	35.0	11th	6.0	22d	2	5	21	18	9.34	.334	W.
2d	16.0	29th	55.0	18.7	37.0	24th	3.0	3d	3	11	17	14	2.37	.077	W.
*1	26.0	6th	64.0	28.3	46.0	12th	9.0	*2	14	5	11	12	3.27	.109	S.W.
21st	45.0	2d	52.0	30.4	45.6	2d	8.0	31st	11	12	8	10	2.03	.066	S.W.
20th	48.0	1st	54.0	27.9	38.0	12th	7.0	2d	20	7	3	8	3.00	.100	S.W.
18th	60.0	11th	48.0	28.1	39.0	3d	7.0	8th	13	14	3	11	4.18	.135	S.W.
*3	47.0	31st	57.0	29.1	47.0	8th	9.0	24th	20	10	1	7	0.97	.031	W.
6th	36.0	26th	61.0	25.6	45.0	1st	8.0	23d	11	15	4	8	1.93	.064	S.W.
*4	18.0	31st	65.0	24.4	37.0	*5	7.0	*6	13	9	8	3	0.82	.026	W.
3d	10.0	29th	58.0	31.4	39.0	1st	7.0	26th	14	4	12	7	1.69	.056	W.
4th	5.0	30th	53.0	14.4	24.5	6th	6.0	25th	5	6	20	8	3.27	.105	W.
.....

*1 12th and 13th. *2 17th and 22d. *3 4th and 10th. *4 8th and 9th. *5 16th and 31st

*6 4th and 5th.

STATION No. 16B.

DR. A. M. BEERS, OBSERVER,

Newcomerstown, Tuscarawas County, Ohio.

Latitude, 40° 23'; Longitude, 81° 33'; Elevation, 798 feet.

Months.	Mean Barometer.	Highest Barometer.	Date.	Lowest Barometer.	Date.	Range of Barometer.	Mean Relative Humidity.	Mean Temperature.	Highest Temperature.
January.....	30.045	30.616	3d	29.461	14th	1.155	77.5	26.8	65.5
February.....	30.165	30.759	4th	29.275	18th	1.484	77.1	36.4	63.0
March.....	30.030	30.591	4th	29.495	24th	1.096	69.5	35.9	68.0
April.....	29.990	30.481	8th	29.327	28th	1.154	72.3	48.2	83.0
May.....	29.972	30.232	15th	29.656	24th	.576	77.2	65.8	92.0
June.....	29.967	30.322	27th	29.664	22d	.658	79.8	67.7	92.0
July.....	29.945	30.150	12th	29.683	9th	.467	78.2	77.5	.....
August.....	29.969	30.274	31st	29.589	17th	.585	79.1	70.0	.....
September.....	30.105	30.377	20th	29.716	7th	.661	81.7	61.4	85.0
October.....	30.069	30.428	25th	29.674	4th	.754	76.6	47.8	.....
November.....	30.090	30.779	30th	29.346	19th	1.433	80.6	36.9	.....
December.....	30.118	30.813	1st	29.610	17th	1.203	85.7	31.2	.....
Average.....	30.039	30.813	Dec. 1st	29.275	Feb. 18th	1.538	77.9	50.5	.....

STATION No. 16B.

DR. A. M. BEERS, OBSERVER,

Newcomerstown, Tuscarawas County, Ohio.

Latitude, 40° 23'; Longitude, 81° 33'; Elevation, 798 feet.

Date.	Lowest Temperature.	Date.	Range of Temperature.	Mean Daily Range of Temperature.	Greatest Daily Range of Temperature.	Date.	Least daily Range of Temperature.	Date.	Number of Clear Days.	Number of Fair Days.	Number of Cloudy Days.	Number of Days on which Rain Fell.	Total Rainfall for Month.	Average Daily Rainfall.	Prevailing Direction of Wind.
22d	— 8.0	4th	73.5	21.8	34.0	17th	7.5	6th	2	12	17	9	2.31	0.075	W.
8th	9.0	14th	54.0	17.2	35.5	10th	4.5	20th	3	5	20	12	6.80	0.243	W.
2d	13.0	*1	55.0	21.5	38.0	2d	8.5	18th	6	11	14	5	1.37	0.044	W.
*2	17.5	6th	65.5	27.5	48.0	9th	8.0	29th	13	10	7	6	4.44	0.148	W.
21st	40.0	1st	52.0	26.0	40.0	19th	7.0	31st	14	11	6	10	4.84	0.156	N.E.
30th	48.0	12th	44.0	27.8	35.5	13th	13.5	1st	18	4	8	10	6.25	0.208	W.
.....	.....	.....	.....	.....	.....	.....	.....	.....	13	16	2	14	4.11	0.133	W.
.....	41.0	*3	.....	.....	.....	.....	.....	.....	17	7	7	4	2.28	0.074	N.E.
13th	32.5	26th	52.5	.....	.....	.....	.....	.....	14	6	10	10	2.75	0.092	S.W.
.....	15.0	31st	.....	.....	.....	.....	.....	.....	13	11	7	4	0.95	0.031	W.
.....	Zero	29th	.....	.....	.....	.....	.....	.....	12	4	14	6	2.43	0.081	W.
.....	4.5	30th	.....	.....	.....	.....	.....	.....	4	12	15	9	1.31	0.042	W.
.....	— 8.0	Jan. 4th	.....	.....	.....	.....	.....	.....	129	109	127	99	39.84	0.109	W.

*1 29th and 30th.

*2 13th and 14th.

*3 28th and 29th.

STATION No. 17A.

JOEL HALL, OBSERVER,

Quaker City, Guernsey County, Ohio.

Latitude, 39° 38'; Longitude, 81° 16'; Elevation, 1,200 feet.

Months.	Mean Barometer.	Highest Barometer.	Date.	Lowest Barometer.	Date.	Range of Barometer.	Mean Relative Humidity.	Mean Temperature.	Highest Temperature.
January	30.126	30.669	3d	29.670	14th	0.999	84.1	27.9	62.0
February	30.262	30.799	4th	29.501	18th	1.298	86.4	36.5	62.0
March	30.113	30.623	4th	29.669	24th	0.954	77.1	36.4	67.0
April	30.075	30.525	8th	29.340	18th	1.185	70.0	51.2	84.0
May	30.064	30.306	15th	29.728	24th	0.578	74.2	67.1	88.0
June.....	30.063	30.373	27th	29.813	2d	0.565	81.2	69.1	91.0
July	30.024	30.198	1st	29.785	9th	0.413	75.6	78.2	100.0
August	30.055	30.302	31st	29.777	17th	0.525	73.6	71.4	95.5
September.....	30.075	30.353	20th	29.712	7th	0.641	75.8	64.6	89.0
October.....	30.148	30.468	25th	29.750	4th	0.718	72.8	50.5	80.0
November	30.135	30.780	30th	29.459	19th	1.321	76.3	40.8	69.5
December	30.209	30.893	1st	29.694	17th	1.199	85.6	32.4	55.5
Average.....	30.112	30.893	Dec. 1st	29.340	April 18th	1.553	77.7	52.2	100.0

STATION No. 17A.

JOEL HALL, OBSERVER,

Quaker City, Guernsey County, Ohio.

Latitude, 39° 38' ; Longitude, 81° 16' ; Elevation, 1,200 feet.

Date.	Lowest Temperature.	Date.	Range of Temperature.	Mean Daily Range of Temperature.	Greatest Daily Range of Temperature.	Date.	Least Daily Range of Temperature.	Date.	Number of Clear Days.	Number of Fair Days.	Number of Cloudy Days.	Number of Days on which Rain fell.	Total Rainfall for Month.	Average Daily Rainfall.	Prevailing Direction of Wind.
22d	−4.0	4th	66.0	22.5	36.0	14th	11.0	6th	2	11	18	15	2.26	0.073	S.
8th	7.0	13th	55.0	19.7	33.5	3d	6.0	18th	3	6	19	21	6.46	0.231	S.
2d	6.0	29th	61.0	21.8	37.0	27th	12.0	*1	5	11	15	17	1.46	0.047	N.W.
14th	19.0	6th	65.0	23.7	33.0	8th	5.0	16th	12	8	10	9	3.53	0.118	S.
*2	44.5	1st	43.5	25.4	33.5	17th	15.0	31st	9	12	10	17	5.70	0.184	S.
*3	46.0	*4	45.0	24.7	36.5	27th	11.0	2d	13	8	9	12	3.47	0.116	S.W.
17th	57.5	12th	42.5	25.6	33.0	15th	18.0	25th	13	12	6	12	4.61	0.148	S.
10th	41.0	28th	54.5	24.6	35.5	8th	17.0	24th	12	15	4	9	1.64	0.053	N.
13th	33.0	*5	56.0	24.1	34.5	4th	14.0	27th	8	15	7	9	2.63	0.088	N.W.
9th	12.0	31st	68.0	24.5	33.5	23d	12.0	5th	13	9	9	5	0.99	0.032	S.
27th	4.0	29th	65.5	21.6	40.0	28th	10.5	*6	14	6	10	7	3.06	0.102	S.
4th	4.5	29th	51.0	16.0	33.5	28th	6.5	*7	3	10	18	10	2.60	0.084	S.
July 17th	−4.0	Jan. 4th	104.0	22.8	40.0	Nov. 28th	5.0	April 16th	107	123	135	143	38.41	0.105	S.

*1 18th and 22d. *2 21st and 22d. *3 18th and 30th. *4 12th and 13th. *5 24th and 26th.

*6 11th and 23d. *7 24th and 25th.

STATION No. 17B.

JOSEPH A. HOOK, OBSERVER,

New Alexandria, Jefferson County, Ohio.

Latitude, 40° 15'; Longitude, 80° 45'; Elevation, 1,050 feet.

[illegible]

STATION No. 17B.

JOSEPH A. HOOK, OBSERVER,

New Alexandria, Jefferson County, Ohio.

Latitude, 40° 15'; Longitude, 80° 45'; Elevation, 1,050 feet.

Date.	Lowest Temperature.	Date.	Range of Temperature.	Mean Daily Range of Temperature.	Greatest Daily Range of Temperature.	Date.	Least Daily Range of Temperature.	Date.	Number of Clear Days.	Number of Fair Days.	Number of Cloudy Days.	Number of Days on which Rain Fell.	Total Rainfall for Month.	Average Daily Rainfall.	Prevailing Direction of Wind.
22d	— 2.0	11th	67.0	17.3	32.0	26th	5.0	15th	3	9	19	15	2.67	0.086	S.W
8th	9.0	27th	53.0	17.0	41.0	27th	5.0	22d	3	5	20	15	5.27	0.188	W.
2d	10.0	29th	56.0	20.5	37.0	28th	7.0	18th	9	9	13	9	1.33	0.043	N.W.
14th	17.0	6th	69.0	23.8	39.0	*1	9.0	22d	13	8	9	9	2.60	0.087	W.
21st	41.0	1st	53.0	23.1	39.0	*2	12.0	31st	11	14	6	13	2.11	0.068	S.
30th	48.0	13th	50.0	24.9	43.0	13th	6.0	17th	17	3	10	10	5.55	0.185	W.
17th	56.0	12th	47.0	26.4	40.0	12th	12.0	25th	18	11	2	12	2.39	0.077	S.
10th	43.0	28th	55.0	24.7	33.0	8th	15.0	*3	12	10	9	9	2.40	0.077	N.
13th	31.0	26th	58.0	22.2	38.0	5th	8.0	*4	9	12	9	14	1.98	0.066	N.
*5	12.0	31st	68.0	20.3	36.0	31st	5.0	30th	9	9	13	6	0.87	0.028	S.
27th	7.0	29th	64.0	18.3	36.0	*6	5.0	*7	11	8	11	7	2.40	0.080	S.
4th	3.0	30th	53.0	15.1	32.0	28th	5.0	24th	3	9	19	8	2.33	0.077	S.W.
July 17th	— 2.0	Jan. 11th	-105.0	21.1	43.0	June 13th	5.0	*8	118	107	140	127	31.95	0.088	S.

*1 3d and 10th.

*2 19th and 20th.

*3 18th and 29th.

*4 17th and 22d.

*5 7th and 9th

*6 2d and 28th.

*7 11th and 15th.

*8 Jan. 15th; Feb. 22d; Oct. 30th; Nov. 11th and 15th

Dec. 24th.

STATION No. 18A.

C. F. STOKEY, OBSERVER,

Canton, Stark County, Ohio.

Latitude, 40° 49' ; Longitude, 81° 23' ; Elevation, 1,070 feet.

Months.	Mean Barometer.	Highest Barometer.	Date.	Lowest Barometer.	Date.	Range of Barometer.	Mean Relative Humidity.	Mean Temperature.	Highest Temperature.
January	30.059	30.627	3d	29.589	14th	1.038	.....	24.8	62.0
February	30.224	30.796	4th	29.330	11th	1.466	.....	33.6	68.7
March	*30.067	30.644	4th	29.503	24th	1.141	.....	33.3	63.3
April	30.010	30.508	8th	29.357	28th	1.151	.....	47.9	83.0
May	30.005	30.263	15th	29.680	25th	0.583	.....	65.0	88.2
*June	29.998	30.356	27th	29.700	22d	0.656	.....	68.3	89.0
July	29.954	30.117	1st	29.680	9th	0.437	.....	76.3	99.0
August	†30.007	30.299	31st	29.704	17th	0.595	.....	68.5	95.8
September	30.103	30.395	20th	29.687	7th	0.708	.....	61.0	88.5
October	30.070	30.457	25th	29.680	4th	0.777	.....	47.3	79.0
November	30.109	30.887	30th	29.373	19th	1.462	.....	37.9	66.3
December	30.133	30.906	1st	29.637	17th	1.269	.....	31.6	55.5
Average	30.062	30.906	Dec. 1st	29.330	Feb. 11th	1.576	.....	49.6	99.0

* Summary for first 26 days. † Summary for first 30 days.

STATION No. 18A.

C. F. STOKEY, OBSERVER,

Canton, Stark County, Ohio.

Latitude, 40° 49' ; Longitude, 81° 23' ; Elevation, 1,070 feet.

Date.	Lowest Temperature.	Date.	Range of Temperature.	Mean Daily Range of Temperature.	Greatest Daily Range of Temperature.	Date.	Least Daily Range of Temperature.	Date.	Number of Clear Days.	Number of Fair Days.	Number of Cloudy Days.	Number of Days on which Rain Fell.	Total Rainfall for Month.	Average Daily Rainfall.	Prevailing Direction of Wind.
22d	—6.2	11th	68.2	18.1	30.0	17th	6.2	6th	4	11	16	13	1.50	.048	S.W.
10th	8.5	28th	60.2	17.0	40.7	11th	5.0	16th	2	9	17	20	6.95	.248	S.W.
2d	10.8	15th	52.5	16.7	28.3	2d	6.8	22d	7	8	11	10	1.76	.068	W.
14th	19.0	5th	64.0	23.4	40.4	9th	4.6	29th	12	12	6	8	3.21	.107	S.W.
21st	40.7	1st	47.5	24.6	38.3	19th	8.7	31st	14	11	6	13	3.24	.105	N.W.
*1	48.5	24th	40.5	22.9	33.0	*2	11.2	2d	15	9	6	12	3.32	.111	W.
17th	54.5	12th	44.5	24.8	38.0	15th	16.0	*3	14	12	5	12	4.86	.157	N.
10th	41.6	29th	54.2	23.4	35.8	9th	5.9	24th	13	13	5	9	2.32	.075	N.E.
13th	31.5	26th	57.0	21.6	40.6	5th	7.1	27th	10	10	10	11	2.42	.081	N.E.
7th	18.5	31st	60.5	21.1	34.5	16th	7.7	5th	8	13	10	7	0.71	.023	S.W.
27th	Zero	29th	66.3	19.3	38.8	2d	3.5	15th	10	9	11	8	2.01	.067	W.
4th	3.3	30th	52.2	14.0	35.0	28th	3.5	27th	4	10	17	10	1.77	.057	S.W.
July 17th	—6.2	Jan. 11th	105.2	20.6	40.7	Feb. 11th	3.5	*4	113	127	120	143	34.07	.095	S.W.

*1 17th and 30th. *2 28th and 30th. *3 23d and 25th. *4 November 15th and December 27th.

STATION No. 18B.

A. G. FROST, OBSERVER.

Youngstown, Mahoning County, Ohio.

Latitude, 41° 6' 5"; Longitude, 80° 38' 53"; Elevation, 855 feet.

Months.	Mean Barometer.	Highest Barometer.	Date.	Lowest Barometer.	Date.	Range of Barometer.	Mean Relative Humidity.	Mean Temperature.	Highest Temperature.
January	30.045	30.583	3d	29.529	13th	1.054	83.0	26.1	63.0
February..	30.169	30.765	4th	29.391	18th	1.374	82.4	33.3	61.5
March.....	30.065	30.591	4th	29.509	24th	1.082	77.2	33.2	63.0
April	29.989	30.461	8th	29.407	28th	1.054	78.2	47.9	86.5
May	29.972	30.257	15th	29.637	26th	0.620	78.5	65.1	89.2
June.....	30.032	30.332	27th	29.730	2d	0.602	81.6	69.9	91.5
July	29.969	30.137	1st	29.741	22d	0.396	75.1	76.9	98.2
August	30.019	30.293	31st	29.712	17th	0.581	80.0	68.5	93.0
September.....	30.012	30.385	20th	29.686	7th	0.699	82.7	60.6	89.0
October.....	30.092	30.418	25th	29.654	4th	0.764	77.0	49.0	83.5
November.....	30.051	30.641	30th	29.439	19th	1.212	79.9	39.7	69.0
December	29.962	30.699	1st	29.515	17th	1.184	81.6	31.9	53.2
Average	30.039	30.765	Feb. 4th	29.391	Feb. 18th	1.374	79.9	50.0	98.2

STATION No. 18B.

A. G. FROST, OBSERVER,

Youngstown, Mahoning County, Ohio.

Latitude, 41° 6' 5"; Longitude, 80° 38' 53"; Elevation, 855 feet.

Date.	Lowest Temperature.	Date.	Range of Temperature.	Mean Daily Range of Temperature.	Greatest Daily Range of Temperature.	Date.	Least Daily Range of Temperature.	Date.	Number of Clear Days.	Number of Fair Days.	Number of Cloudy Days.	Number of Days on which Rain fell.	Total Rainfall for Month.	Average Daily Rainfall.	Prevailing Direction of Wind.
22d	—11.0	8th	74.0	21.7	33.5	26th	8.0	6th	1	11	19	12	1.12	0.033	S.
*1	7.5	28th	54.0	18.3	43.5	11th	6.5	23d	2	7	19	16	6.66	0.239	S.
2d	11.0	29th	52.0	20.9	32.0	2d	11.0	19th	4	9	18	13	2.74	0.088	N.
13th	18.0	5th	68.5	27.6	46.5	13th	11.0	18th	11	8	11	13	1.80	0.060	S.
22d	38.0	1st	51.2	27.7	44.0	2d	16.0	25th	13	11	7	12	2.11	0.068	S.
17th	40.2	27th	51.3	22.1	32.0	28th	10.0	3d	15	13	2	8	2.86	0.095	S.
17th	52.0	12th	46.2	25.2	34.0	28th	16.0	9th	16	10	5	12	1.54	0.050	N.
10th	39.0	*2	54.0	20.2	37.0	10th	13.0	27th	10	12	9	10	2.23	0.072	N.
13th	28.5	26th	60.5	24.9	39.0	5th	2.0	16th	8	9	13	11	2.01	.067	.
7th	14.0	31st	69.5	29.6	49.0	17th	11.0	12th	4	14	13	5	0.68	0.022	N.
27th	5.2	29th	63.8	22.1	38.0	6th	8.0	23d	8	7	15	8	1.31	0.044	S.
10th	2.0	29th	51.2	18.6	33.5	6th	9.5	5th	4	9	18	10	1.14	0.037	S.
July 17th	—11.0	Jan. 8th	109.2	23.2	49.0	Oct. 17th	2.0	Sept. 16th	96	120	149	130	26.20	0.072	S.

*1 8th and 11th. *2 28th and 29th.

STATION No. 19A.

PROF. GEO. H. COLTON, OBSERVER,

Hiram, Portage County, Ohio.

Latitude, 41° 19'; Longitude, 81° 09'; Elevation, 1,260 feet.

Date.	Lowest Temperature.	Date.	Range of Temperature.	Mean Daily Range of Temperature.	Greatest Daily Range of Temperature.	Date.	Least Daily Range of Temperature.	Date.	Number of Clear Days.	Number of Fair Days.	Number of Cloudy Days.	Number of Days on which Rain Fell.	Total Rainfall for Month.	Average Daily Rainfall.	Prevailing Direction of Wind.
23d	−7.5	11th	69.5	17.1	37.5	20th	6.0	14th	1	12	18	19	1.83	0.059	S. W.
11th	6.0	28th	53.0	16.0	43.5	11th	8.0	*1	1	8	19	20	9.56	0.341	S.E.
2d	7.0	29th	54.0	17.6	33.0	24th	8.0	28th	8	11	12	13	2.86	0.092	N.W.
14th	16.0	4th	64.0	20.8	37.2	13th	4.0	18th	7	15	8	17	3.98	0.133	N.W.
22d	43.0	26th	45.3	21.9	35.0	2d	8.7	31st	12	12	7	14	3.50	0.113	S.E.
.....
.....
10th	51.6	26th	44.6	19.8	33.0	9th	10.5	17th	15	3	13	10	2.83	0.091	S.W.
13th	37.0	*2	53.0	20.0	33.5	5th	6.0	23d	8	7	15	13	3.74	0.125	S.W.
8th	21.0	31st	56.0	17.1	34.0	16th	7.0	*3	11	2	18	10	1.86	0.060	S.W.
7th	3.0	29th	59.2	16.3	32.7	7th	2.9	15th	7	9	14	10	2.60	0.087	S.W.
4th	4.0	29th	49.0	13.7	32.5	28th	7.5	18th	2	4	25	13	2.35	0.076	S.E.
.....

*1 3d and 22d. *2 24th, and 25th. *3 5th and 24th.

STATION No. 19B.

E. C. WADE, OBSERVER,

Jefferson, Ashtabula County, Ohio.

Latitude, $41^{\circ} 44'$; Longitude, $80^{\circ} 45'$; Elevation, 934 feet.

[illegible]

STATION No. 19B.

E. C. WADE, OBSERVER,

Jefferson, Ashtabula County, Ohio.

Latitude, 41° 44'; Longitude, 80° 45'; Elevation, 934 feet.

Date.	Lowest Temperature.	Date.	Range of Temperature.	Mean Daily Range of Temperature.	Greatest Daily Range of Temperature.	Date.	Least Daily Range of Temperature.	Date.	Number of Clear Days.	Number of Fair Days.	Number of Cloudy Days.	Number of Days on which Rain Fell.	Total Rainfall for Month.	Average Daily Rainfall.	Prevailing Direction of wind.
8th	8.0	13th	50.0	15.0	36.0	11th	2.0	16th	3	9	16	19	6.22	0.222	W.
2d	9.0	29th	51.0	16.0	27.0	24th	5.0	19th	11	8	12	15	3.66	0.118	N.W.
*1	16.0	6th	61.0	21.5	42.0	14th	5.0	18th	8	16	6	12	2.61	0.087	N.W.
22d	43.0	14th	44.0	20.4	32.0	20th	9.0	*2	14	13	4	15	2.99	0.096	N.E.
30th	50.0	13th	39.0	19.5	32.0	30th	11.0	1st	15	8	7	12	2.49	0.083	S.
30th	55.0	11th	41.0	22.2	37.0	30th	10.0	10th	15	14	2	6	1.68	0.054	S.
5th	45.0	31st	50.0	21.6	33.0	*3	11.0	22d	15	9	7	8	2.36	0.076	N.
13th	35.0	26th	57.0	20.2	35.0	13th	7.0	27th	11	7	12	11	2.81	0.094	S.E.
7th	20.0	26th	60.0	18.3	30.0	20th	7.0	5th	9	4	18	13	3.55	0.114	S.
*4	13.0	29th	52.0	16.0	36.0	2d	3.0	15th	6	9	15	13	3.15	0.105	S.
4th	7.0	28th	47.0	12.3	29.0	28th	5.0	15th	2	10	19	14	1.87	0.060	W.

*1 10th and 14th. *2 8th and 31st. *3 3d and 31st. *4 7th and 27th.

STATION No. 20.

DR. O. N. STODDARD, OBSERVER,

Wooster, Wayne County, Ohio.

Latitude, 40° 48' 47"; Longitude, 81° 53' 37"; Elevation, 1,063 feet.

[illegible]

STATION No. 20.

DR. O. N. STODDARD, OBSERVER,

Wooster, Wayne County, Ohio.

Latitude, 40° 48' 47''; Longitude, 81° 53' 37''; Elevation, 1,063 feet.

Date.	Lowest Temperature.	Date.	Range of Temperature.	Mean Daily Range of Temperature.	Greatest Daily Range of Temperature.	Date.	Least Daily Range of Temperature.	Date.	Number of Clear Days.	Number of Fair Days.	Number of Cloudy Days.	Number of Days on which Rain Fell.	Total Rainfall for Month.	Average Daily Rainfall.	Prevailing Direction of Wind.
.....
.....
2d	10.0	29th	53.0	13.4	31.0	24th	2.5	28th	6	9	16	12	2.71	.088	N.W.
14th	20.0	*1	65.2	21.3	41.7	14th	1.0	16th	11	11	8	7	2.99	.100	S.W.
21st	43.5	*2	47.5	23.5	38.5	19th	9.5	31st	14	9	8	9	3.48	.112	N.E
18th	49.0	24th	40.0	22.4	32.0	15th	13.0	5th	10	14	6	10	5.78	.193	S.W.
17th	55.5	12th	44.5	25.5	37.5	27th	11.7	21st	13	15	3	4	0.94	.030	S.
4th	39.0	29th	57.5	24.5	39.0	13th	7.5	18th	12	10	9	4	1.80	.058	N.
5th	31.0	26th	56.5	22.0	44.0	5th	7.5	27th	8	12	10	11	2.08	.069	N.
7th	16.0	31st	63.5	18.9	36.5	20th	2.0	4th	13	6	12	6	1.10	.035	S.W.
.....	-5.5	29th	.....	.....	.....	.....	.....	.....	8	11	11	6	2.21	.074	S.
.....	1.0	30th	.....	.....	.....	.....	.....	.....	3	12	16	8	2.68	.086	S.
.....

*1 6th and 19th.

*2 19th and 29th.

STATION No. 21A.

WM. LINE, SERGEANT Signal Service Corps U. S. A., OBSERVER,

Cleveland, Cuyahoga County, Ohio.

Latitude, 41° 30' ; Longitude, 81° 42' ; Elevation, 690 feet.

Months,	Mean Barometer.	Highest Barometer.	Date.	Lowest Barometer.	Date.	Range of Barometer.	Mean Relative Humidity.	Mean Temperature.	Highest Temperature.
January	29.987	30.590	3d	29.383	14th	1.207	77.6	24.9	62.0
February	30.144	30.834	4th	29.253	18th	1.581	82.9	31.6	61.0
March	30.039	30.680	4th	29.374	24th	1.306	77.0	31.3	68.0
April	29.981	30.494	8th	29.286	28th	1.208	70.4	45.1	76.0
May	30.002	30.270	* 1	29.660	24th	0.610	69.9	61.5	85.0
June	29.992	30.380	27th	29.660	22d	0.720	73.0	68.5	87.0
July	29.962	30.140	14th	29.680	9th	0.460	69.8	76.3	95.2
August	29.994	30.300	31st	29.700	17th	0.600	67.2	69.0	94.0
September	30.096	30.400	20th	29.660	7th	0.740	71.2	61.6	93.0
October	30.040	30.470	25th	29.580	4th	0.890	66.6	50.1	81.3
November	30.056	30.880	30th	29.320	19th	1.560	69.7	40.2	67.2
December	30.080	30.830	1st	29.580	17th	1.250	77.7	31.5	57.0
Average	30.031	30.880	Nov. 30th	29.253	Feb. 18th	1.627	72.7	49.3	95.2

*1 14th and 15th.

STATION NO. 21A.

WM. LINE, SERGEANT Signal Service Corps U. S. A., OBSERVER,

Cleveland, Cuyahoga County, Ohio.

Latitude, 41° 30' ; Longitude, 81° 42' ; Elevation, 690 feet.

Date.	Lowest Temperature.	Date.	Range of Temperature.	Mean Daily Range of Temperature.	Greatest Daily Range of Temperature.	Date.	Least Daily Range of Temperature.	Date.	Number of Clear Days.	Number of Fair Days.	Number of Cloudy Days.	Number of Days on which Rain Fell.	Total Rainfall for Month.	Average Daily Rainfall.	Prevailing Direction of Wind.
22d	—5.9	11th	67.9	18.0	31.8	19th	7.6	5th	2	10	19	23	1.92	0.062	S.
8th	9.2	13th	51.8	16.4	37.9	11th	4.9	20th	2	10	16	21	7.73	0.276	N.W.
2d	11.2	29th	51.8	13.7	31.0	2d	5.7	17th	10	10	11	13	3.05	0.098	N.W
10th	19.3	5th	56.7	18.2	36.0	4th	6.3	29th	8	16	6	12	1.82	0.061	W.
2d	41.2	1st	43.8	18.4	30.1	2d	8.9	8th	14	9	8	14	3.45	0.111	N.E.
16th	50.6	24th	36.4	15.8	22.9	* 2	7.5	7th	13	12	5	14	2.43	0.081	W.
17th	59.6	12th	35.6	18.0	30.7	* 3	8.4	25th	17	14	.....	10	0.99	0.032	N.E.
4th	46.7	29th	47.3	15.9	26.1	4th	6.5	25th	13	13	5	9	3.52	0.114	S.E.
13th	36.1	26th	56.9	17.8	32.1	5th	7.4	11th	6	12	12	12	3.62	0.121	S.E.
7th	24.2	26th	57.1	16.5	29.8	16th	6.1	5th	1	16	14	11	1.80	0.058	S.W.
7th	6.3	29th	60.9	17.3	34.2	27th	4.0	15th	5	9	16	10	2.97	0.099	S.W.
4th	4.7	20th	52.3	13.2	35.3	28th	2.9	12th	2	10	19	17	2.06	0.066	S.W.
July 17th	—5.9	Jan. 11th	101.1	16.6	37.9	Feb. 11th	2.9	Dec. 12th	93	141	131	166	35.36	0.097	S.W.

* 2 12th and 30th. * 3 15th and 30th.

STATION No. 21B.

G. A. HYDE, OBSERVER,
Cleveland, Cuyahoga County, Ohio.

Latitude, 41° 30' ; Longitude, 81° 27' ; Elevation, 656 feet.

Date.	Lowest Temperature.	Date.	Range of Temperature.	Mean Daily Range of Temperature.	Greatest Daily Range of Temperature.	Date.	Least Daily Range of Temperature.	Date.	Number of Clear Days.	Number of Fair Days.	Number of Cloudy Days.	Number of Days on which Rain Fell.	Total Rainfall for Month.	Average Daily Rainfall.	Prevailing Direction of Wind.
22d	−5.9	11th	67.9	16.9	32.7	29th	6.3	23d	0	9	22	23	2.21	0.071	S.
8th	9.0	13th	52.0	16.1	34.3	11th	4.5	20th	2	9	17	21	7.54	0.269	N.W.
2d	11.2	29th	49.3	13.6	28.1	24th	3.0	17th	7	9	15	16	2.89	0.093	N.W.
10th	11.2	5th	64.8	17.1	34.3	2d	2.0	17th	11	10	9	13	2.89	0.096	N.E.
21st	41.2	1st	44.3	18.8	30.4	20th	6.5	31st	13	5	13	12	3.77	0.122	N.E.
30th	50.6	29th	36.9	16.8	25.5	30th	8.1	2d	11	12	7	15	2.99	0.100	N.
17th	59.6	12th	35.9	17.9	30.9	30th	10.0	25th	14	16	1	5	1.34	0.043	N.E.
4th	46.0	29th	48.0	16.5	27.0	4th	6.8	25th	10	15	6	13	3.51	0.113	N.E.
13th	36.1	26th	56.9	17.8	32.1	5th	7.4	11th	7	10	13	14	3.78	0.126	S.
7th	24.2	26th	57.1	16.8	29.8	16th	6.8	11th	6	11	14	14	2.45	0.079	S.
7th	6.3	29th	60.9	17.1	34.0	2d	4.0	12th	5	11	14	11	3.18	0.106	S.
4th	4.7	29th	52.3	12.4	28.0	28th	4.9	19th	2	10	19	17	1.77	0.057	S.
July 17th	−5.9	Jan. 11th	101.4	16.5	24.3	*1	2.0	April 17th	88	127	150	174	38.32	0.105	S.

*1 February 11th and April 2d.

STATION No. 22.

PROF. C. S. HOWE, OBSERVER,

Akron, Summit County, Ohio.

Latitude, $41^{\circ} 5'$; Longitude, $81^{\circ} 20'$; Elevation, 1,080 feet.

[illegible]

CHART SHOWING MONTHLY RANGE OF TEMPERATURE FOR THE YEAR ENDING DECEMBER 31, 1887.

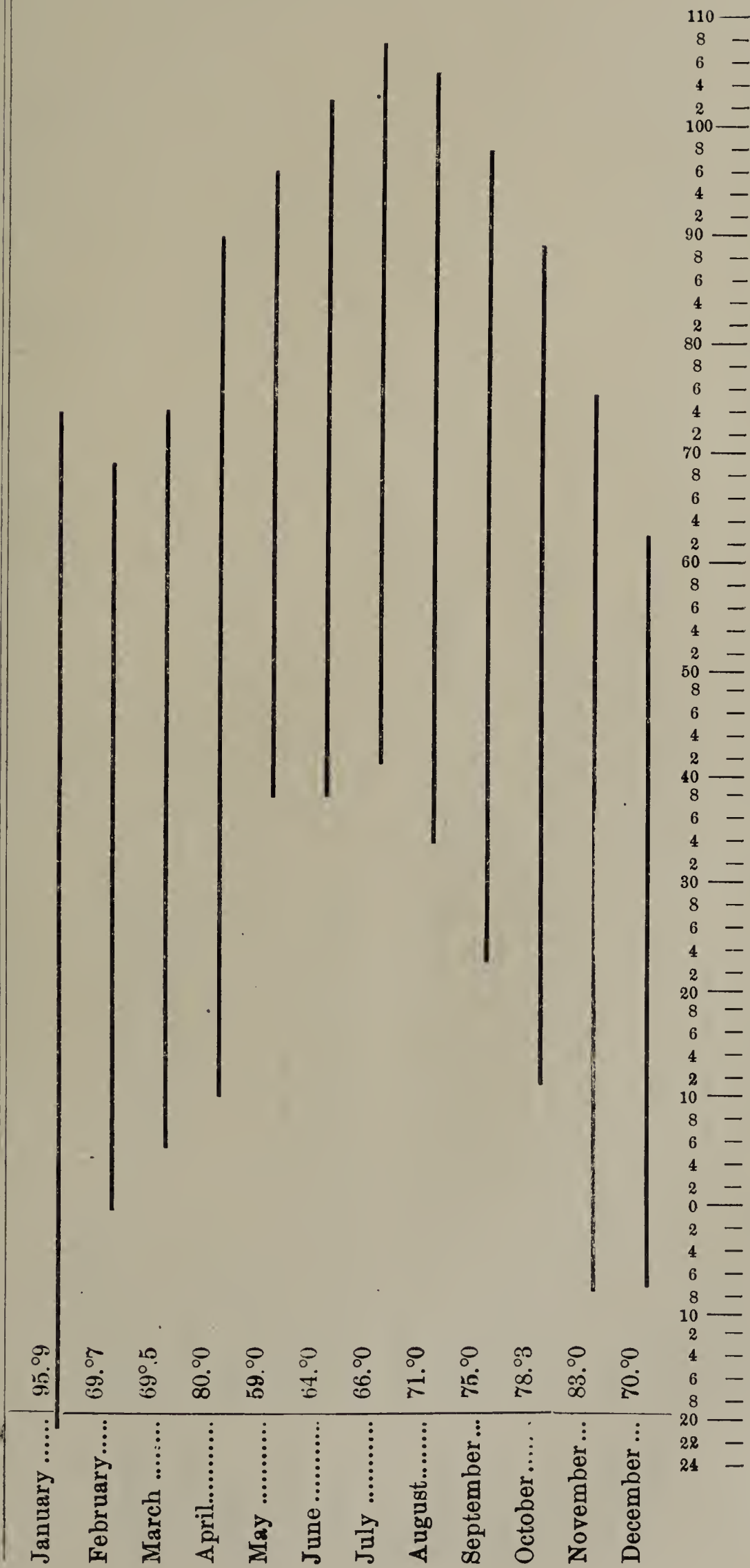


CHART SHOWING MEAN MONTHLY RAINFALL FOR THE YEAR ENDING DECEMBER 31, 1887.

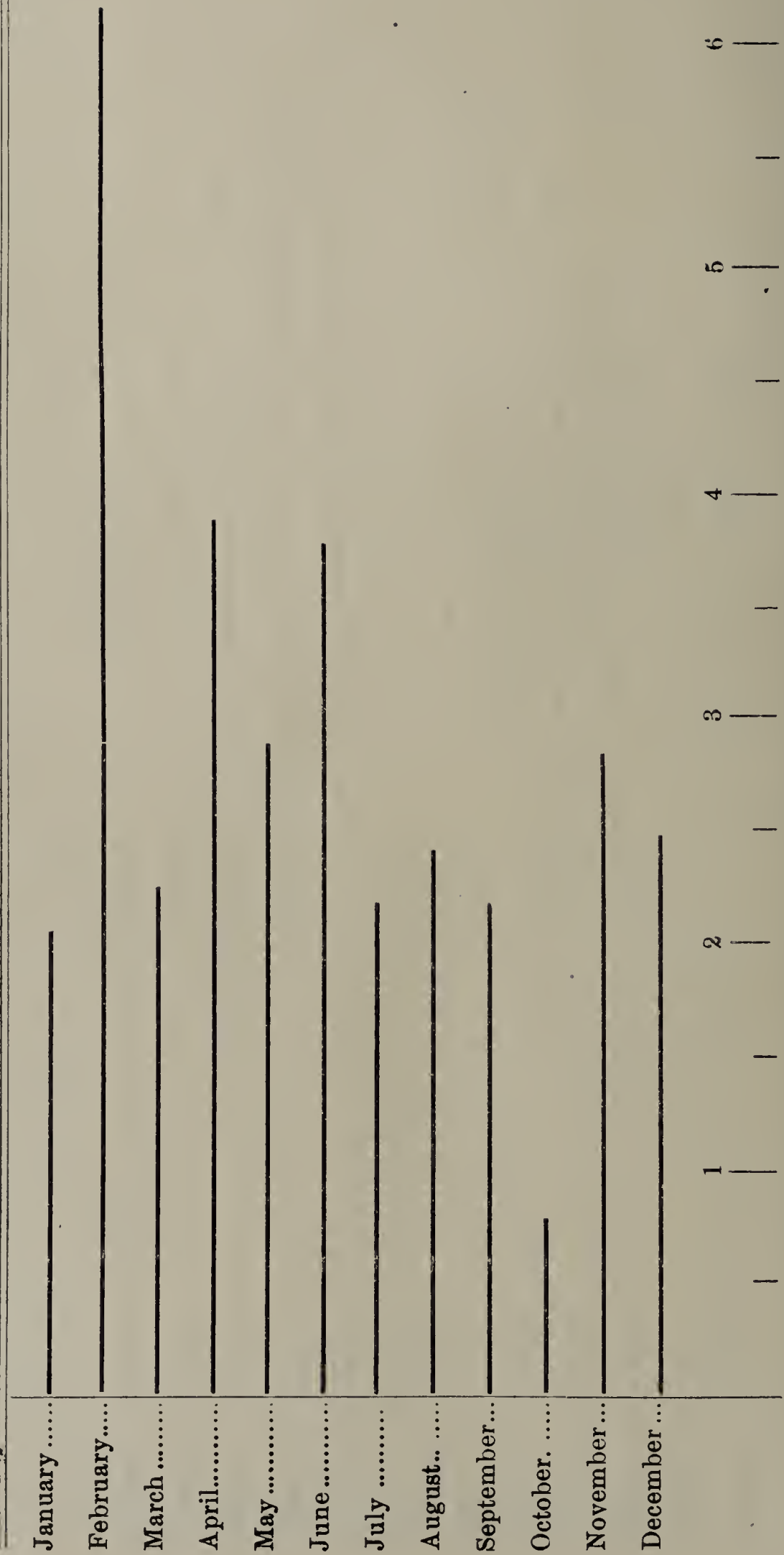


CHART SHOWING THE RAINFALL AT EACH STATION DURING THE YEAR ENDING DECEMBER 31, 1887.

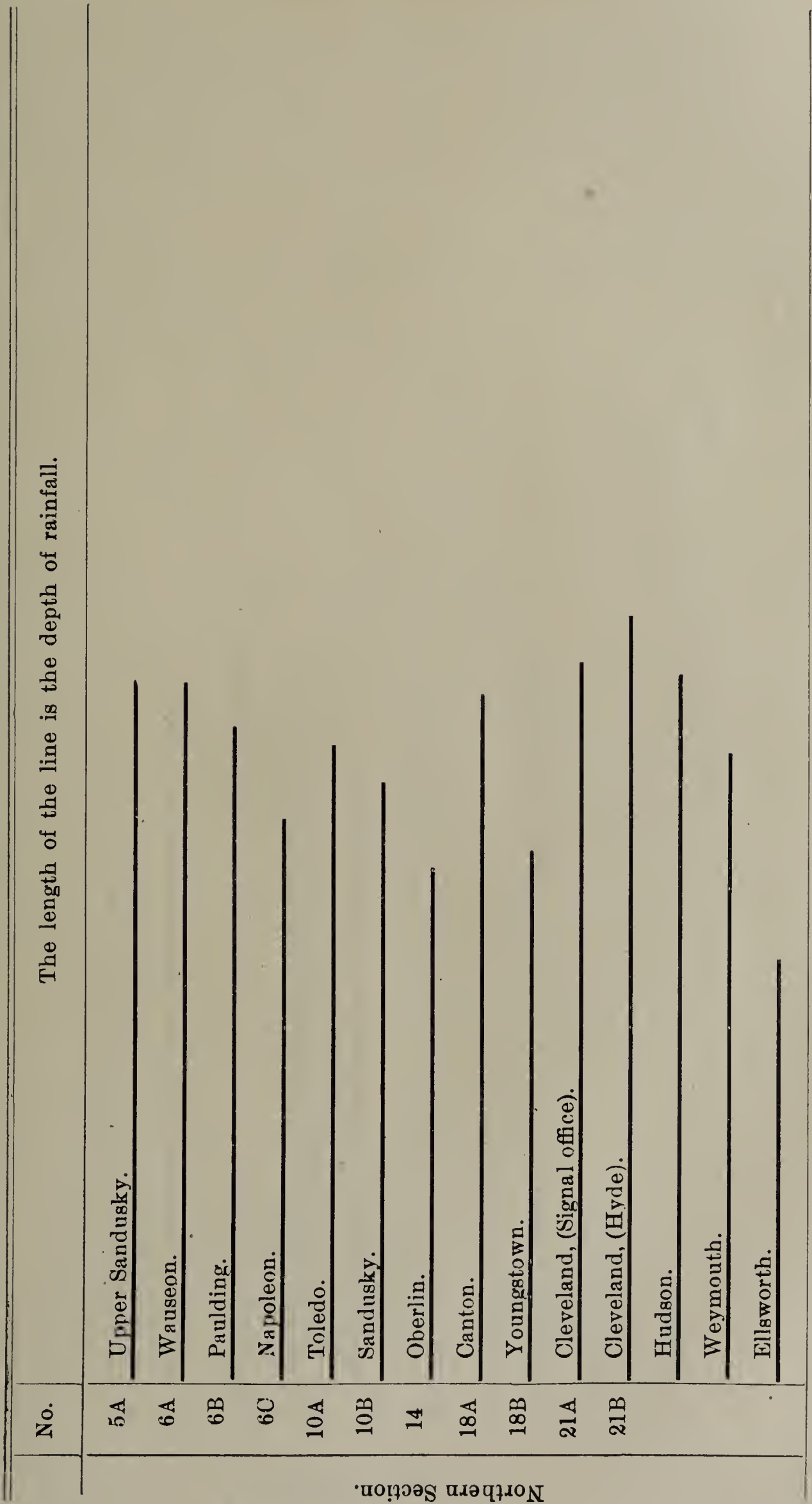
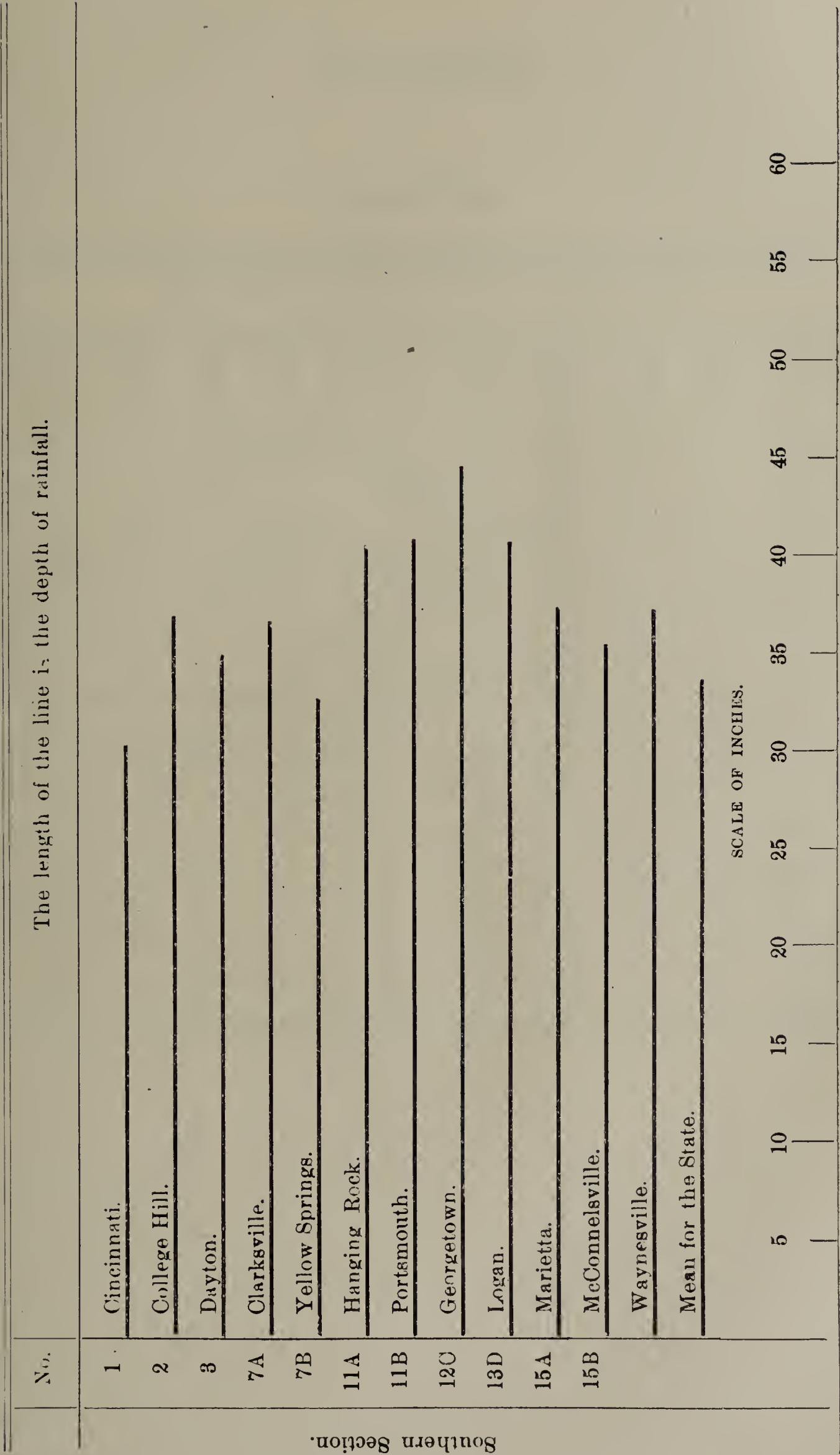


CHART SHOWING TOTAL RAINFALL AT EACH STATION, ETC.—Continued.

Middle Section.		No.	The length of the line is the depth of rainfall.
	4B	Sidney.	
	4C	Greenville.	
	9A	Bangorville.	
	13A	Columbus.	
	13B	Ohio State University.	
	16B	Newcomerstown.	
	17A	Quaker City.	
	17B	New Alexandria.	

CHART SHOWING TOTAL RAINFALL AT EACH STATION, ETC.—Continued.

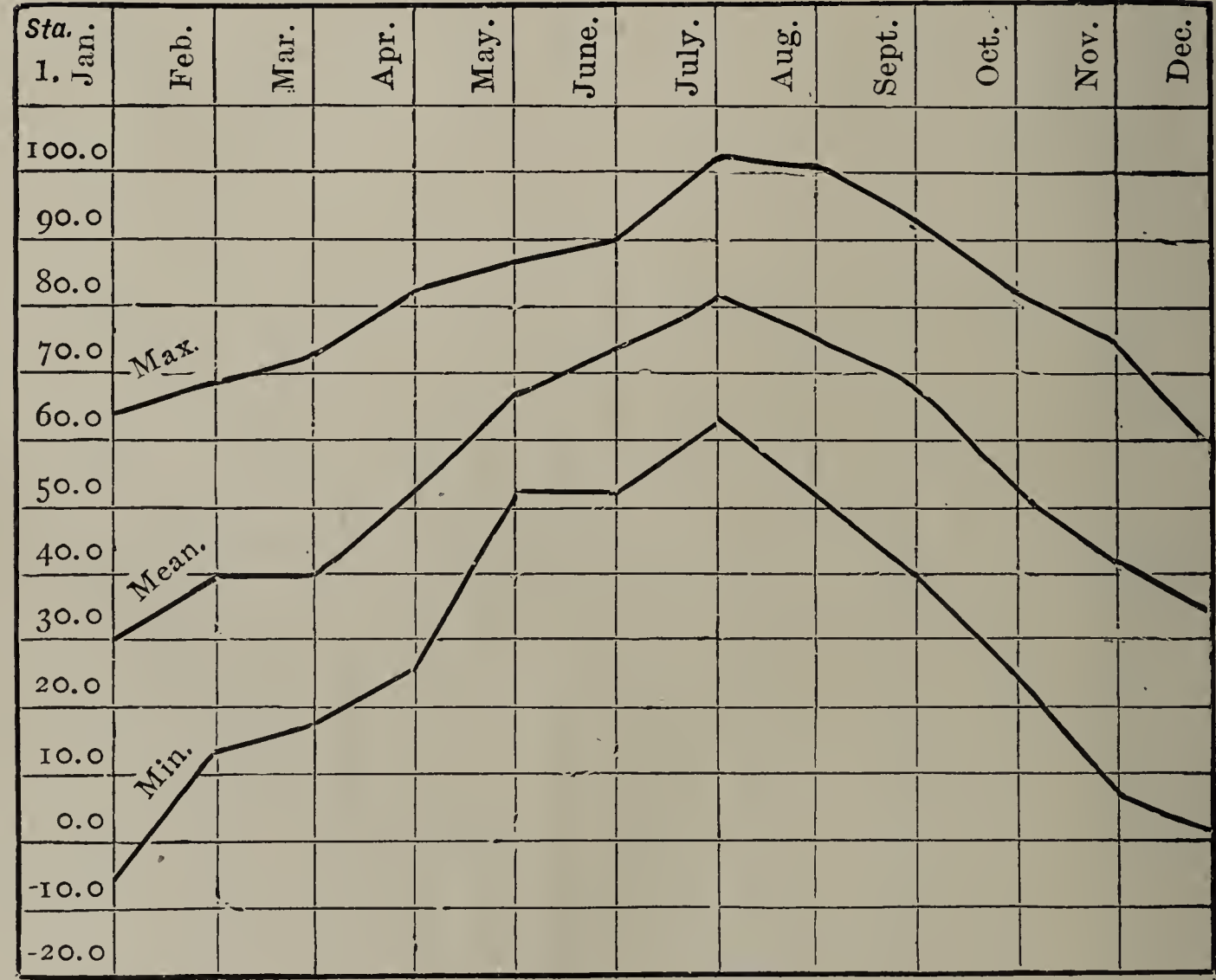


Southern Section.

STATION No. 1.

CINCINNATI.

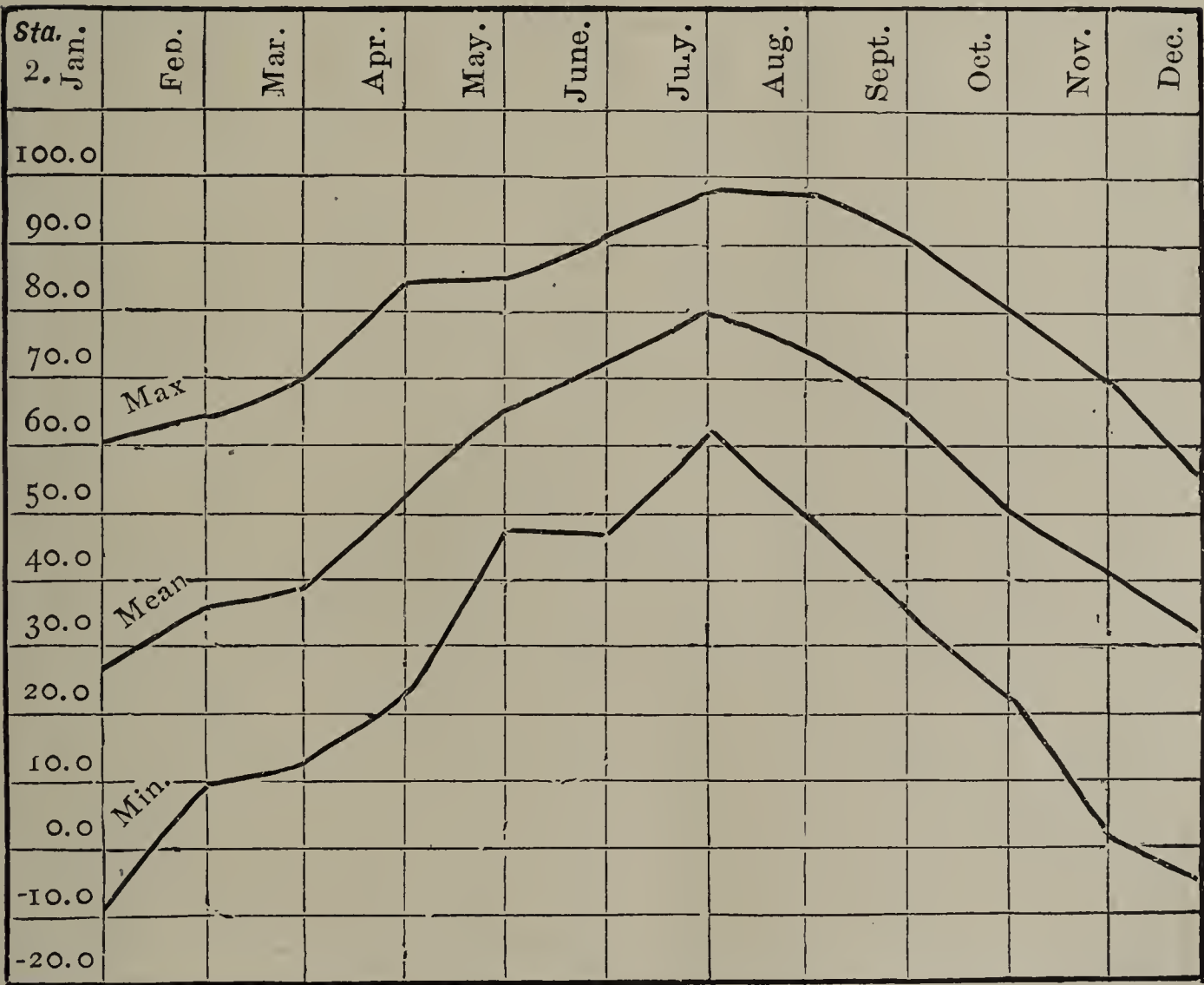
Chart showing the monthly maximum, mean and minimum temperatures at Cincinnati, for the year ending December 31, 1887.



STATION No. 2.

COLLEGE HILL.

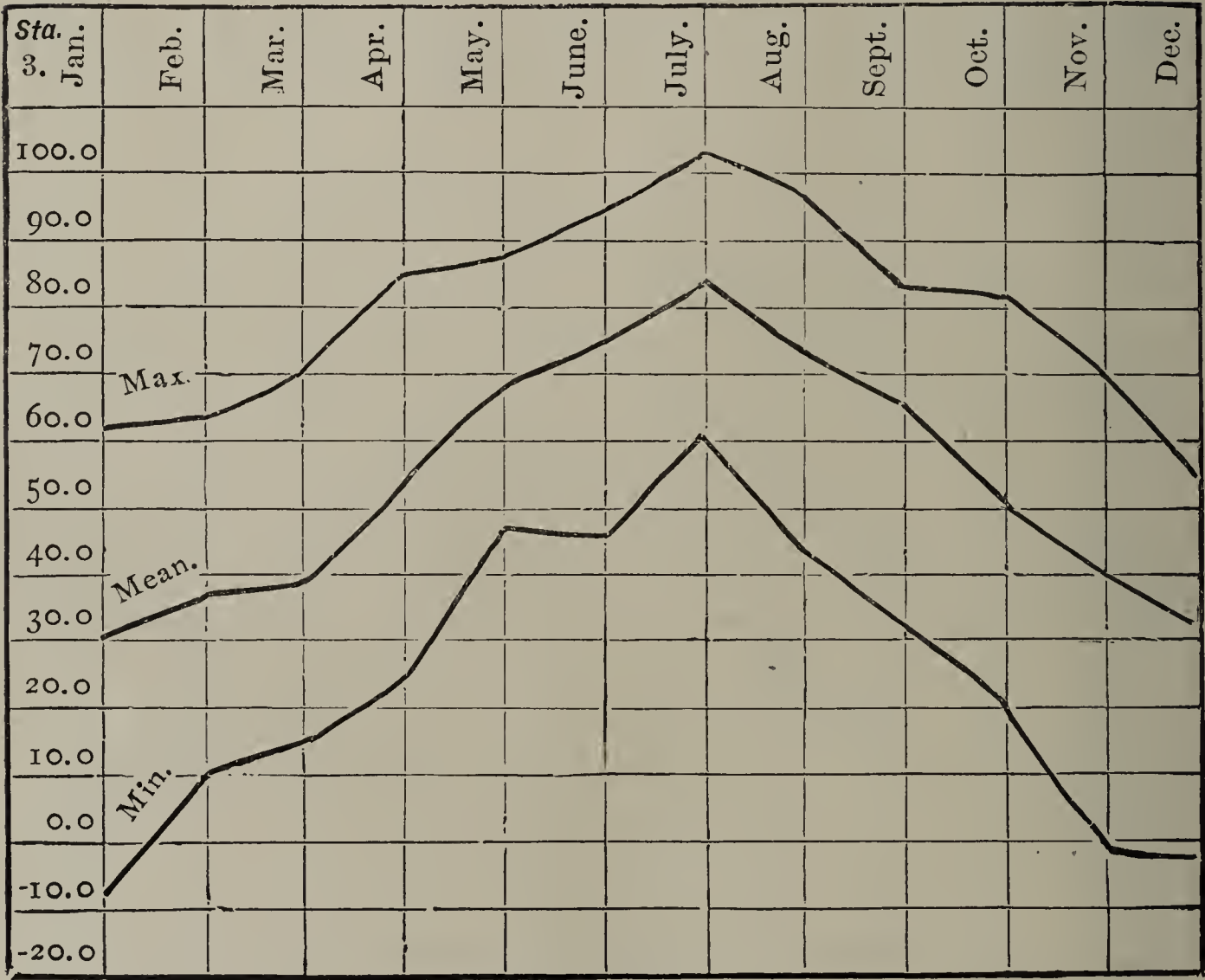
Chart showing the monthly maximum, mean and minimum temperatures at College Hill, for the year ending December 31, 1887.



STATION No. 3.

DAYTON.

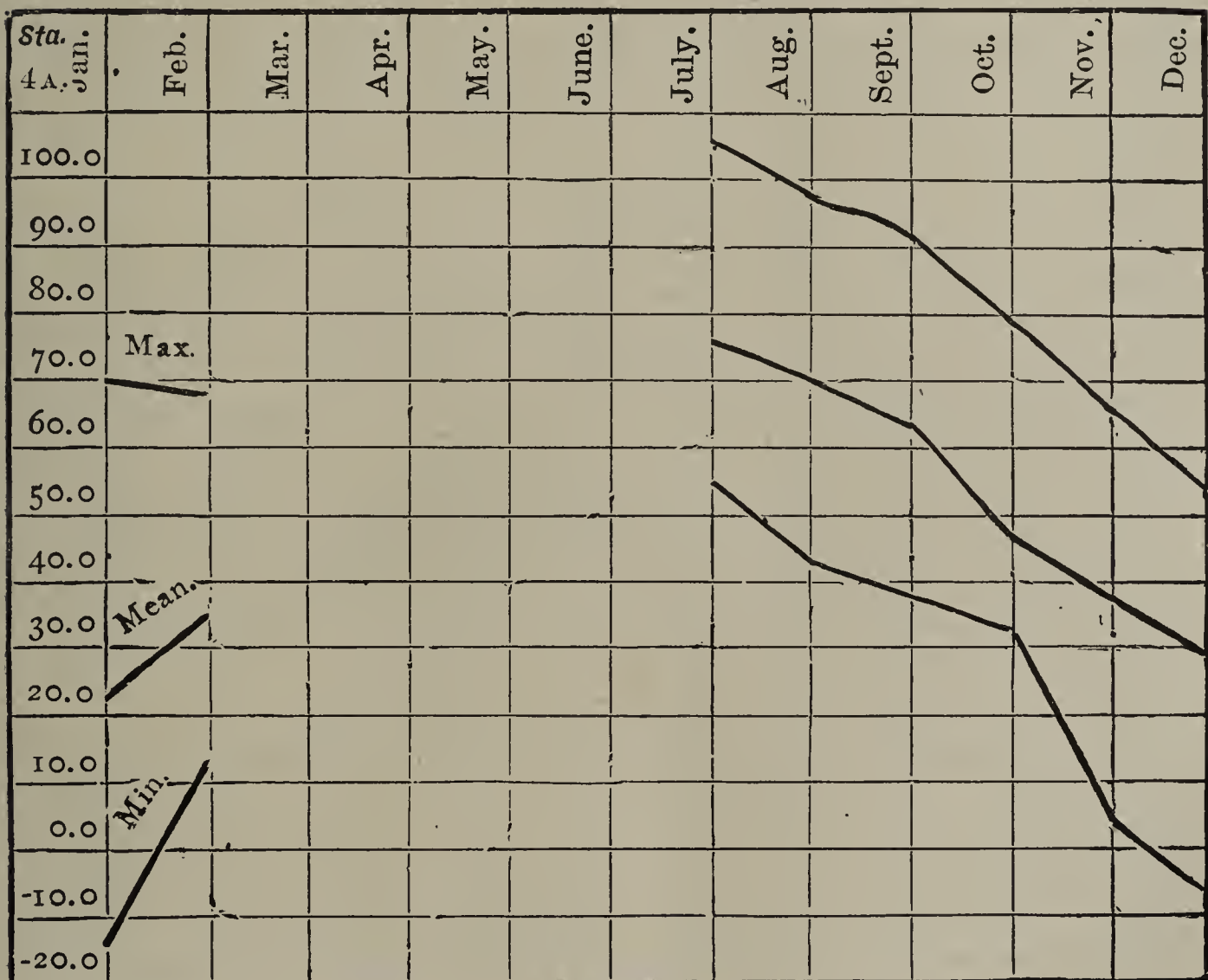
Chart showing the monthly maximum, mean and minimum temperatures at Dayton, for the year ending December 31, 1887.



STATION No. 4A.

NEW BREMEN.

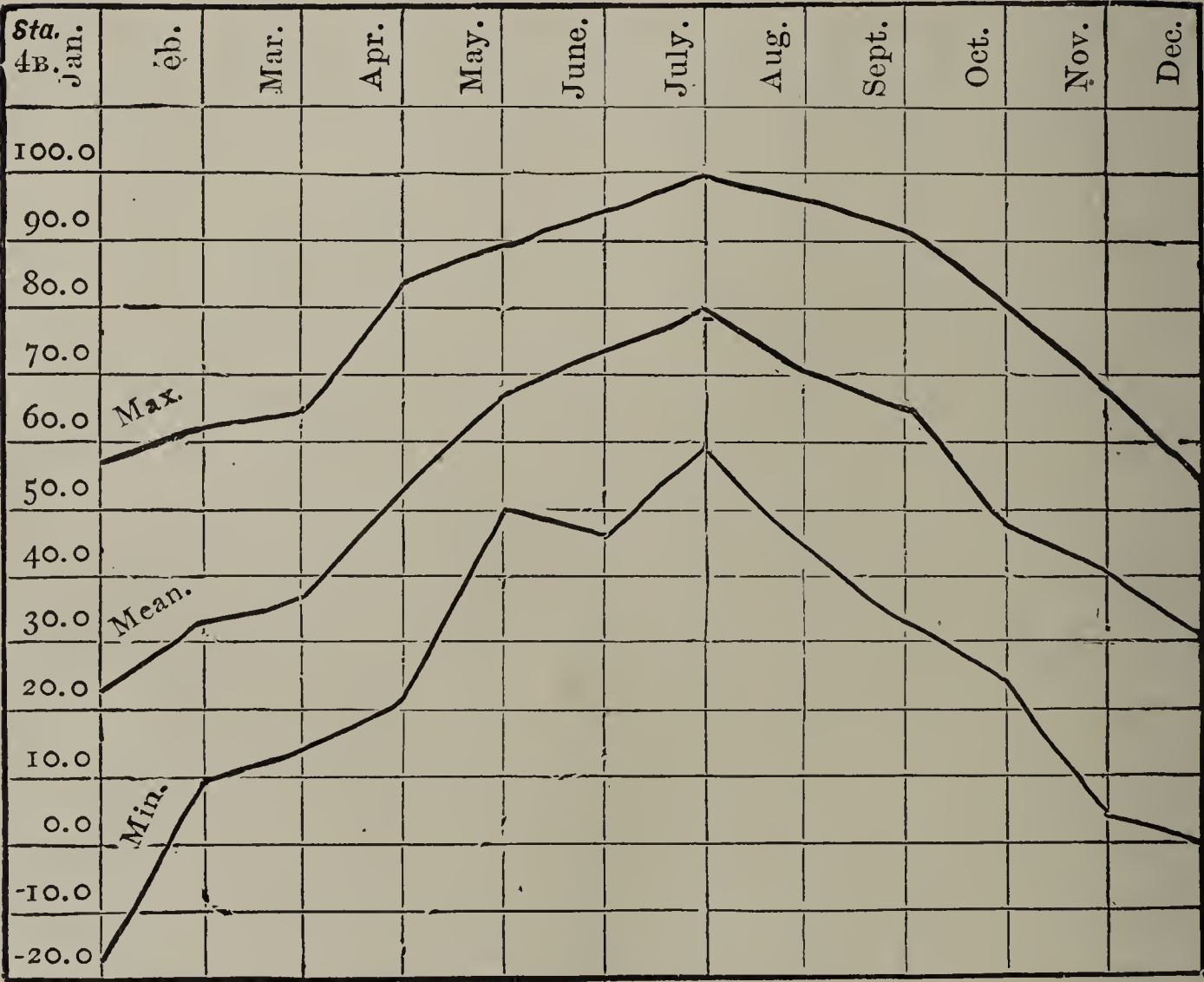
Chart showing the monthly maximum, mean and minimum temperatures at New Bremen, for the year ending December 31, 1887.



STATION No. 4B.

SIDNEY.

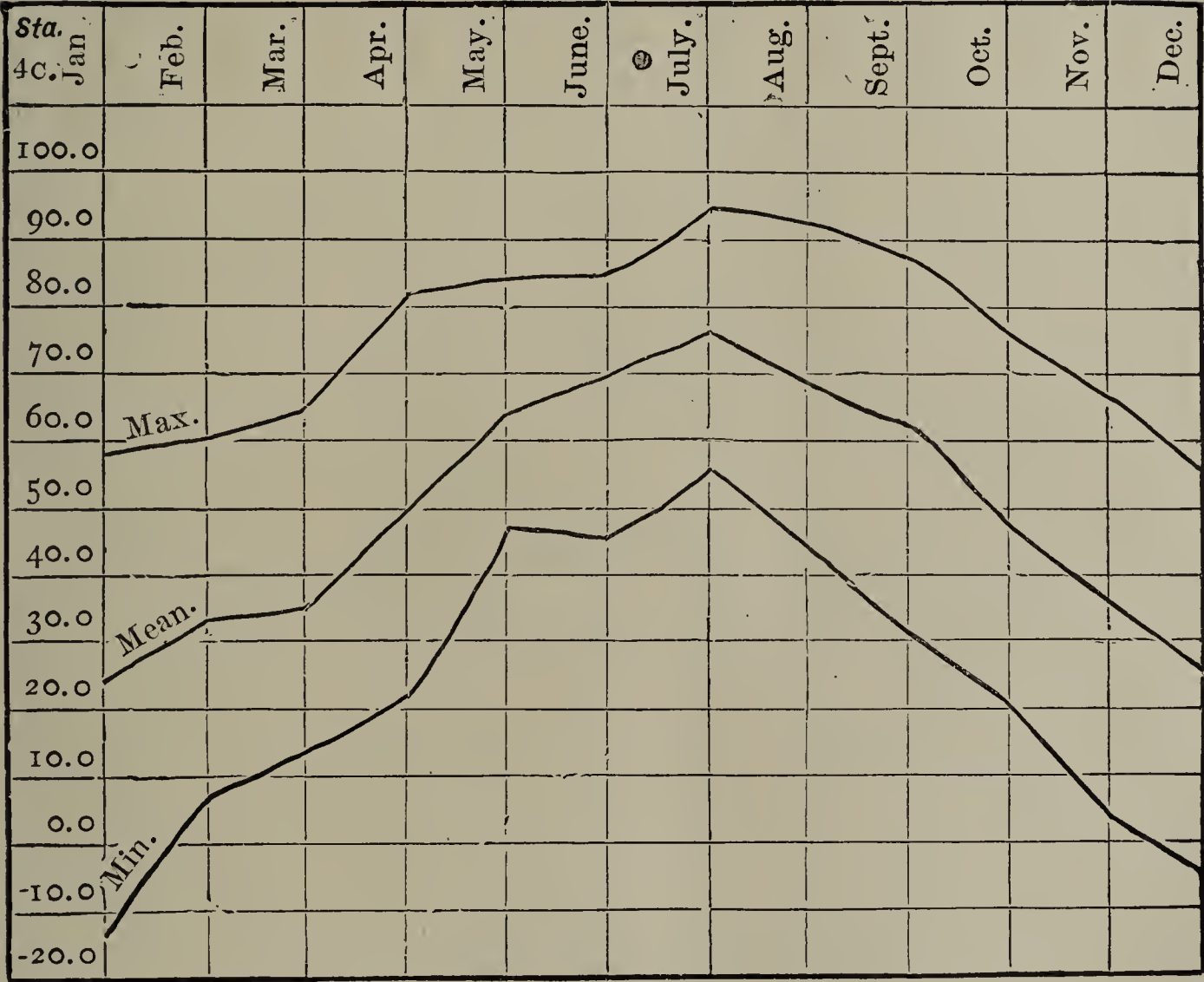
Chart showing the monthly maximum, mean and minimum temperatures at Sidney, for the year ending December 31, 1887.



STATION No. 4C.

GREENVILLE.

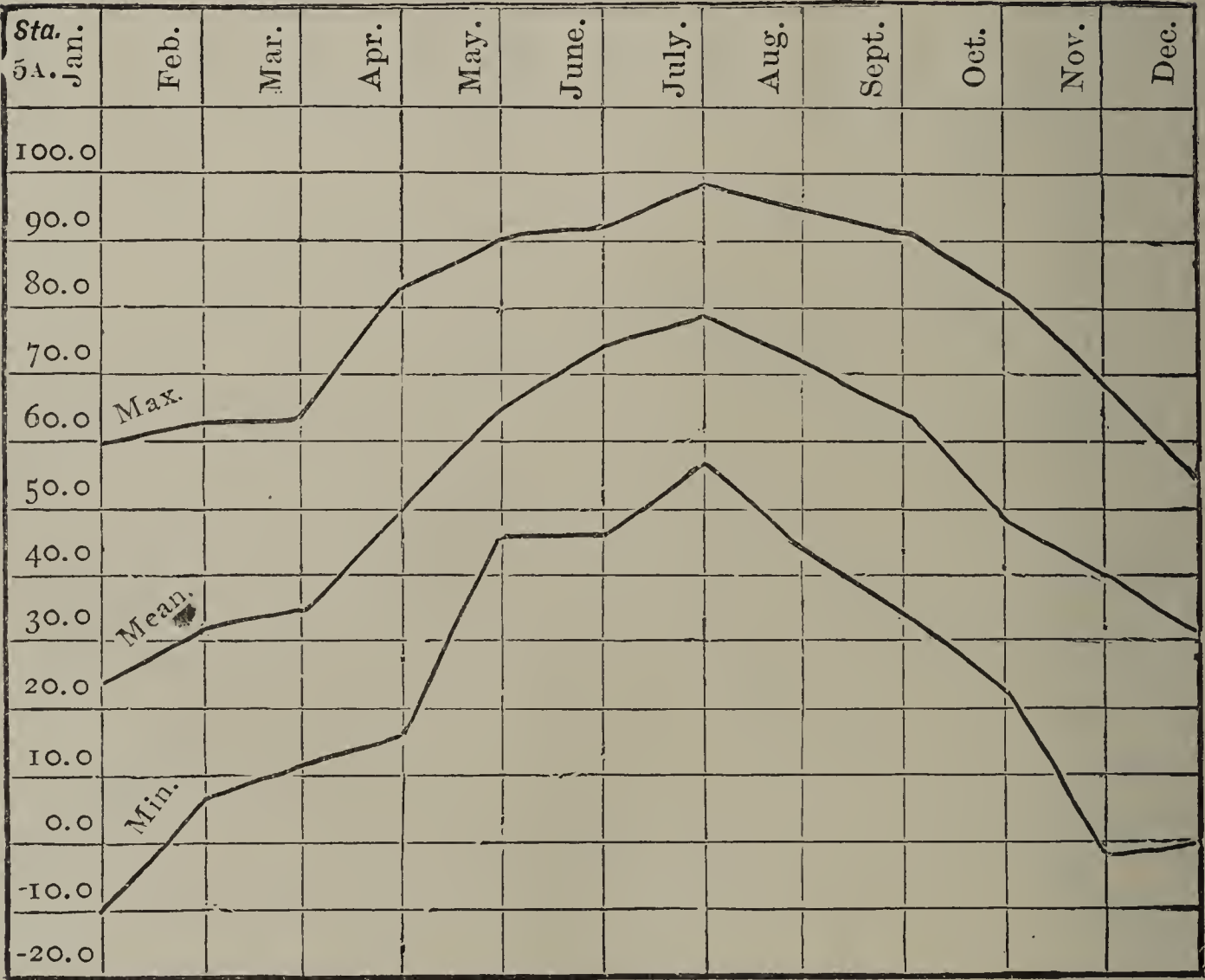
Chart showing the monthly maximum, mean and minimum temperatures at Greenville, for the year ending December 31, 1887.



STATION No. 5A.

UPPER SANDUSKY.

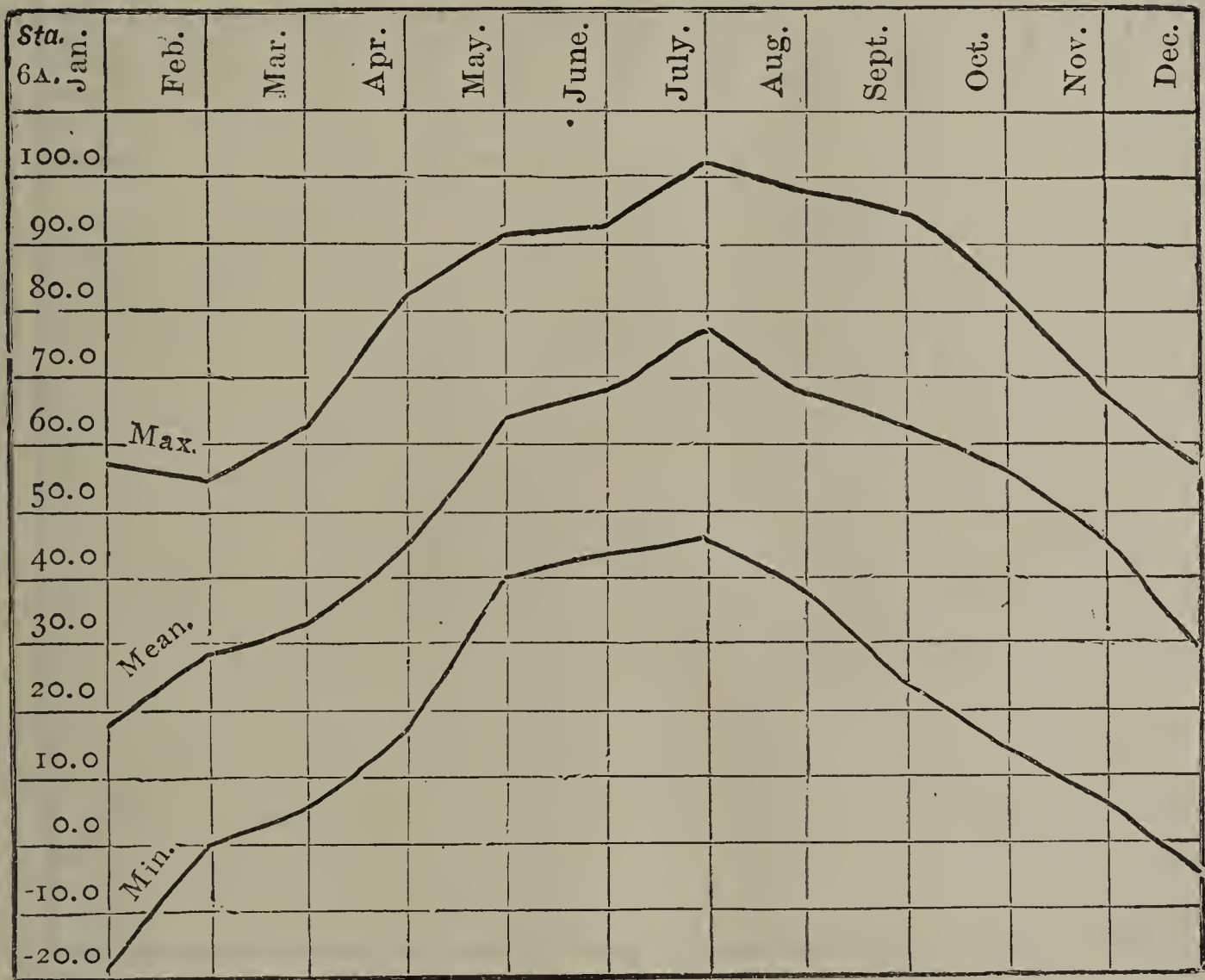
Chart showing the monthly maximum, mean and minimum temperatures at Upper Sandusky, for the year ending December 31, 1887.



STATION No. 6A.

WAUSEON.

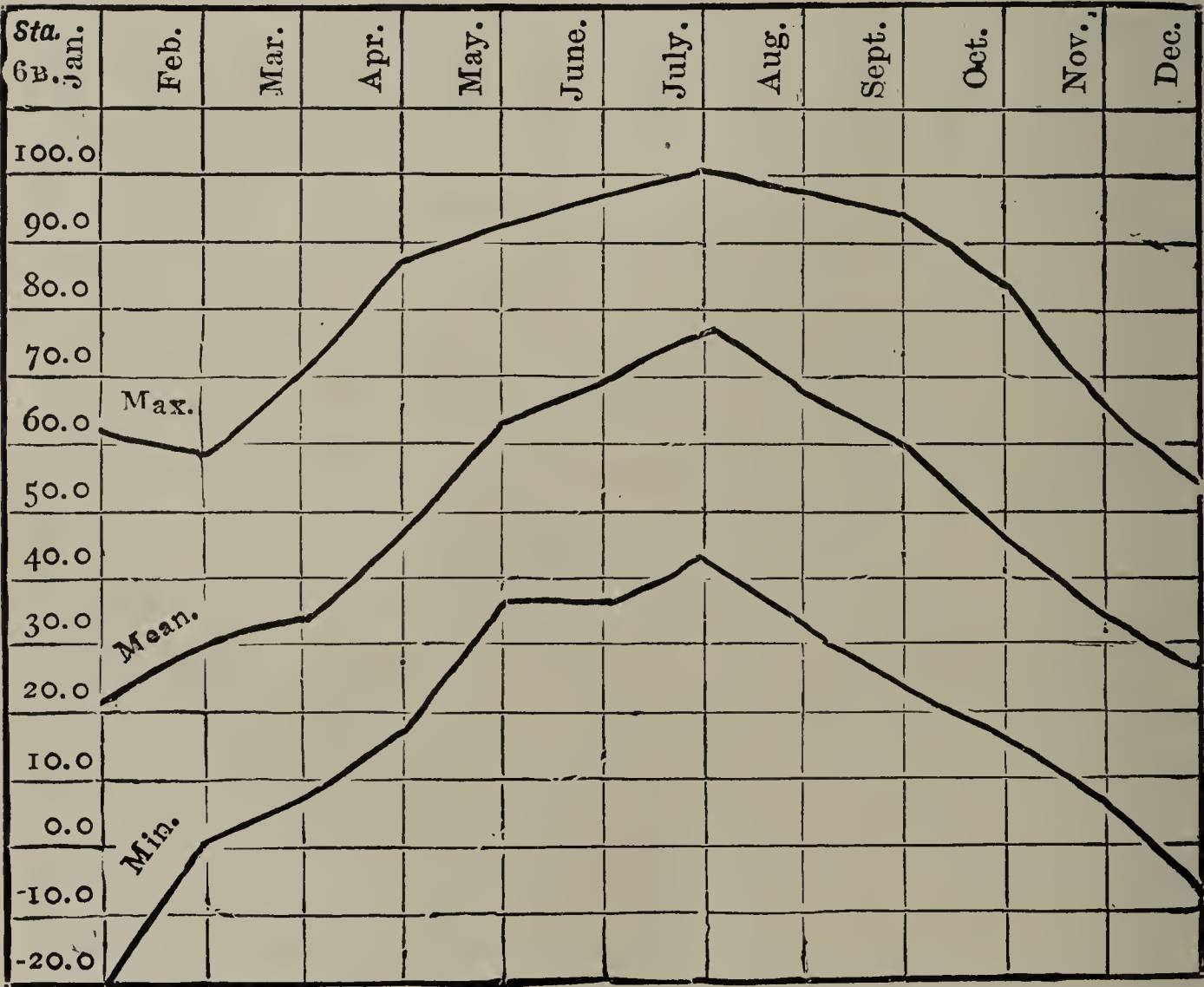
Chart showing the monthly maximum, mean and minimum temperatures at Wauseon, for the year ending December 31, 1887.



STATION No. 6B.

PAULDING.

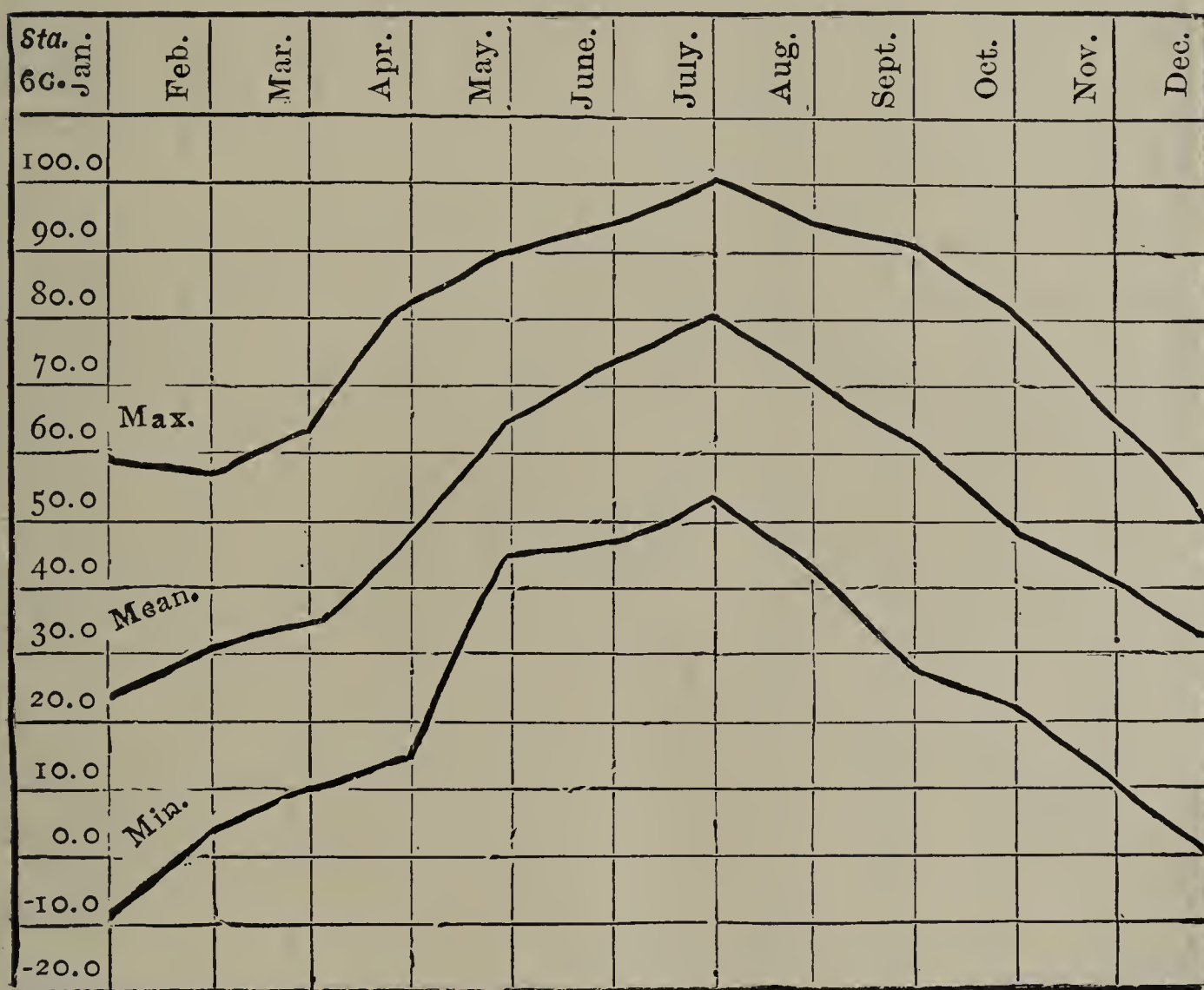
Chart showing the monthly maximum, mean and minimum temperatures at Paulding, for the year ending December 31, 1887.



STATION No. 6C.

NAPOLEON.

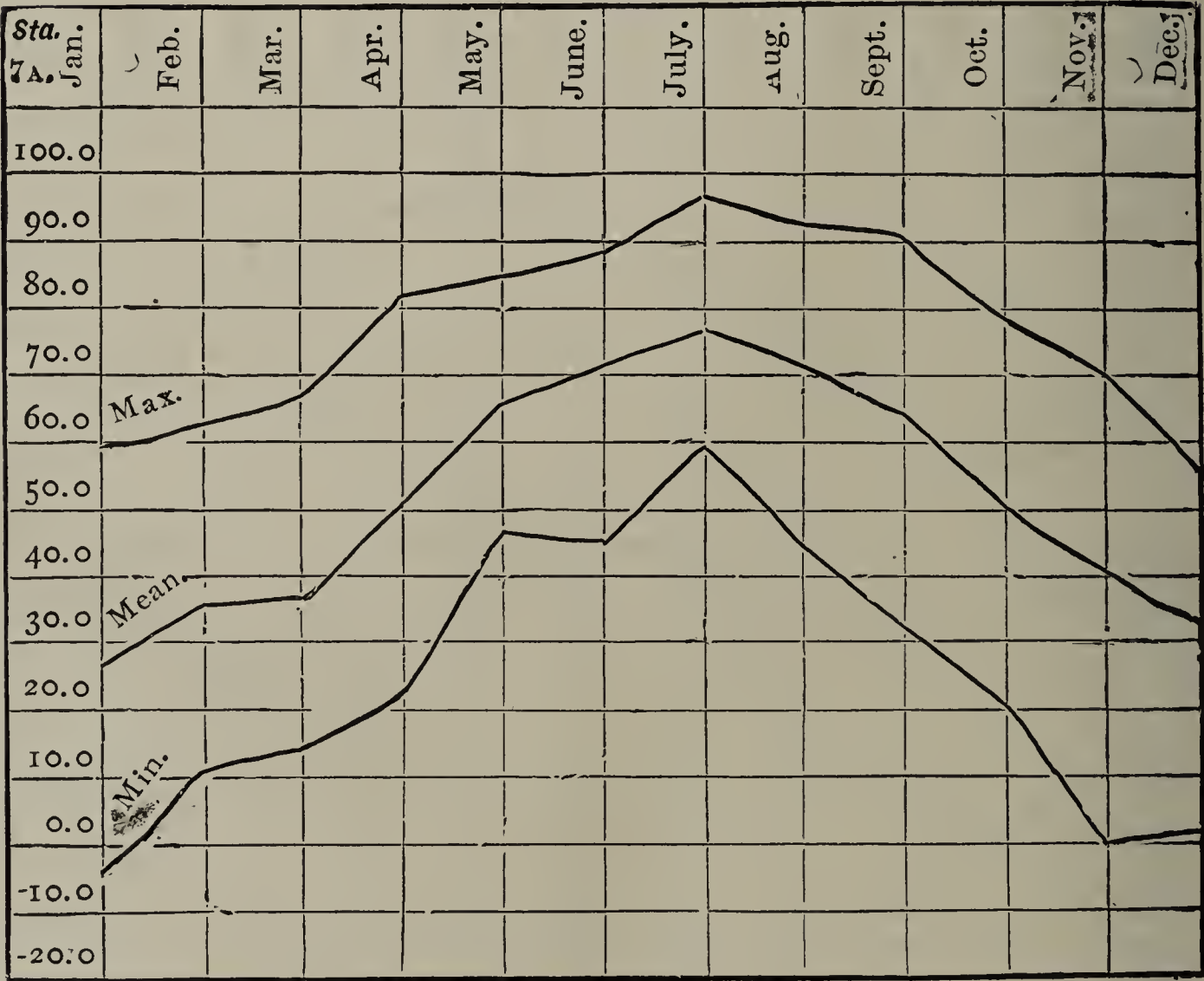
Chart showing the monthly maximum, mean and minimum temperatures at Napoleon, for the year ending December 31, 1887.



STATION No. 7A.

YELLOW SPRINGS.

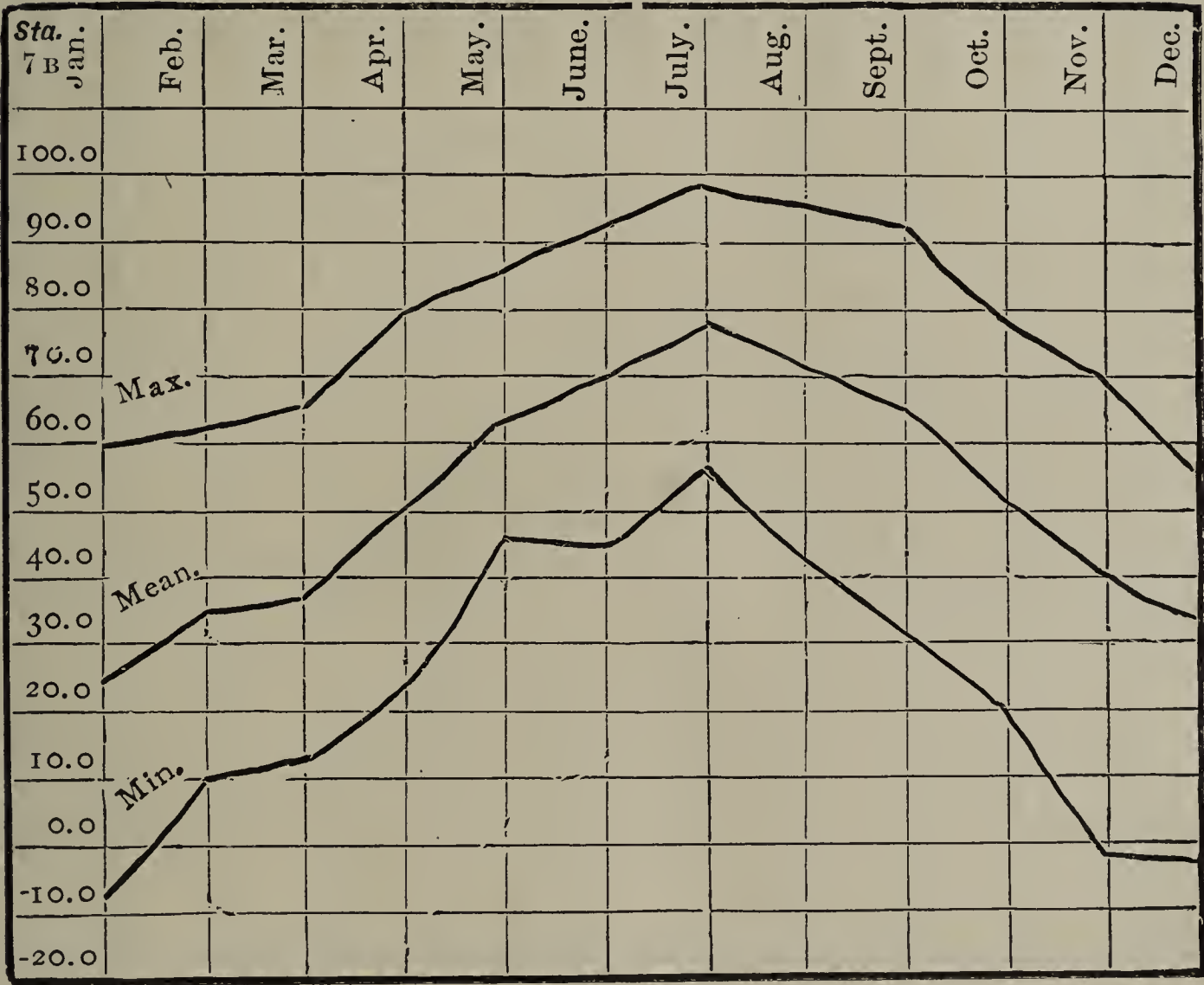
Chart showing the monthly maximum, mean and minimum temperatures at Yellow Springs, for the year ending December 31, 1887.



STATION No. 7B.

CLARKSVILLE.

Chart showing the monthly maximum, mean and minimum temperatures at
Clarksville, for the year ending December 31, 1887.



NORTH LEWISBURG.

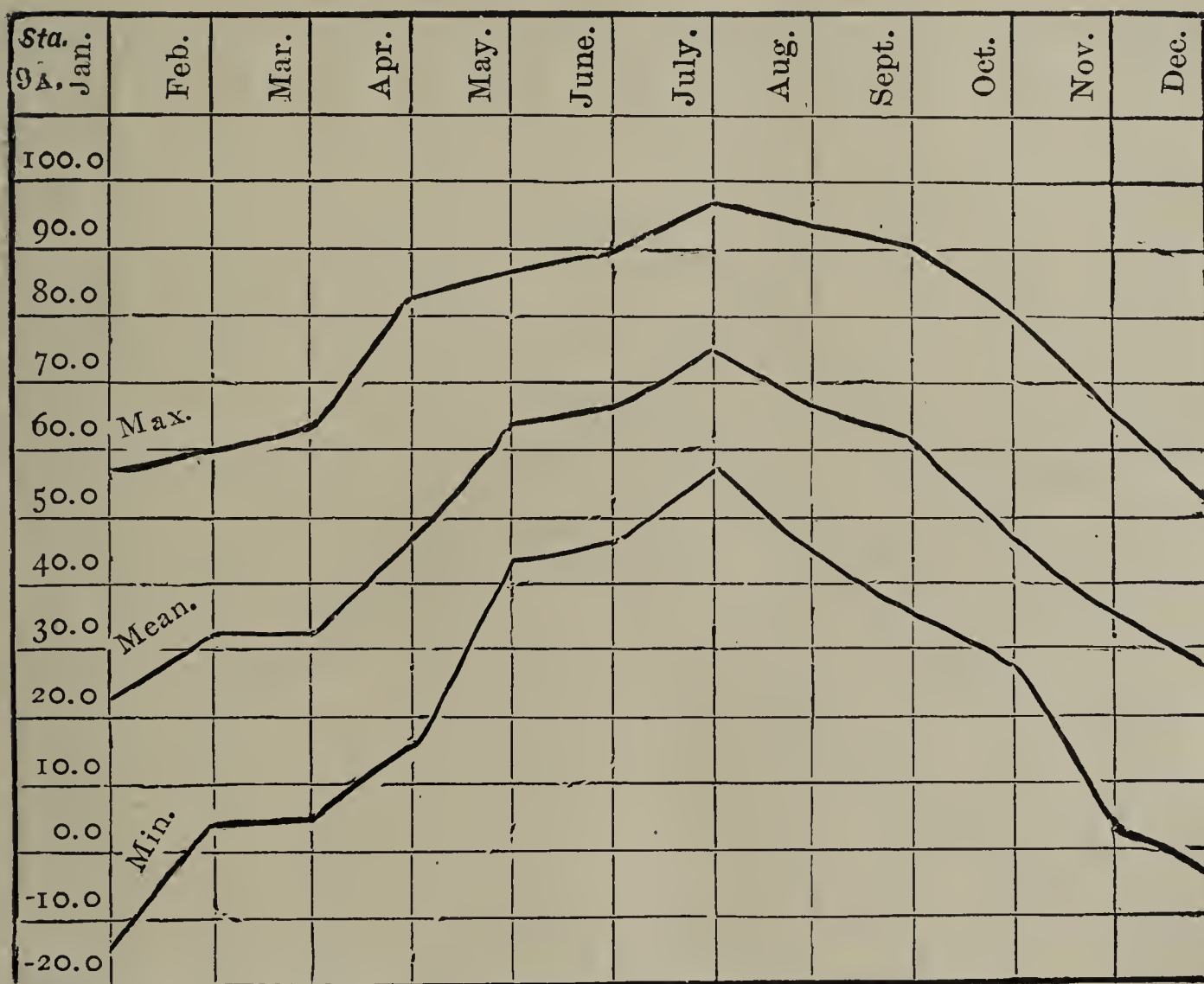
Sta. 8.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
100.0												
90.0												
80.0												
70.0												
60.0												
50.0												
40.0												
30.0												
20.0												
10.0												
0.0												
-10.0												
-20.0												

Month	Max.	Mean.	Min.
Jan.	60.0	24.0	-12.0
Feb.	55.0	30.0	4.0
Mar.	62.0	33.0	6.0
Apr.	82.0	34.0	4.0
May.	-	-	-
June.	92.0	48.0	48.0
July.	100.0	51.0	51.0
Aug.	95.0	40.0	40.0
Sept.	92.0	30.0	30.0
Oct.	80.0	18.0	18.0
Nov.	65.0	8.0	8.0
Dec.	52.0	2.0	2.0

STATION No. 9A.

BANGORVILLE.

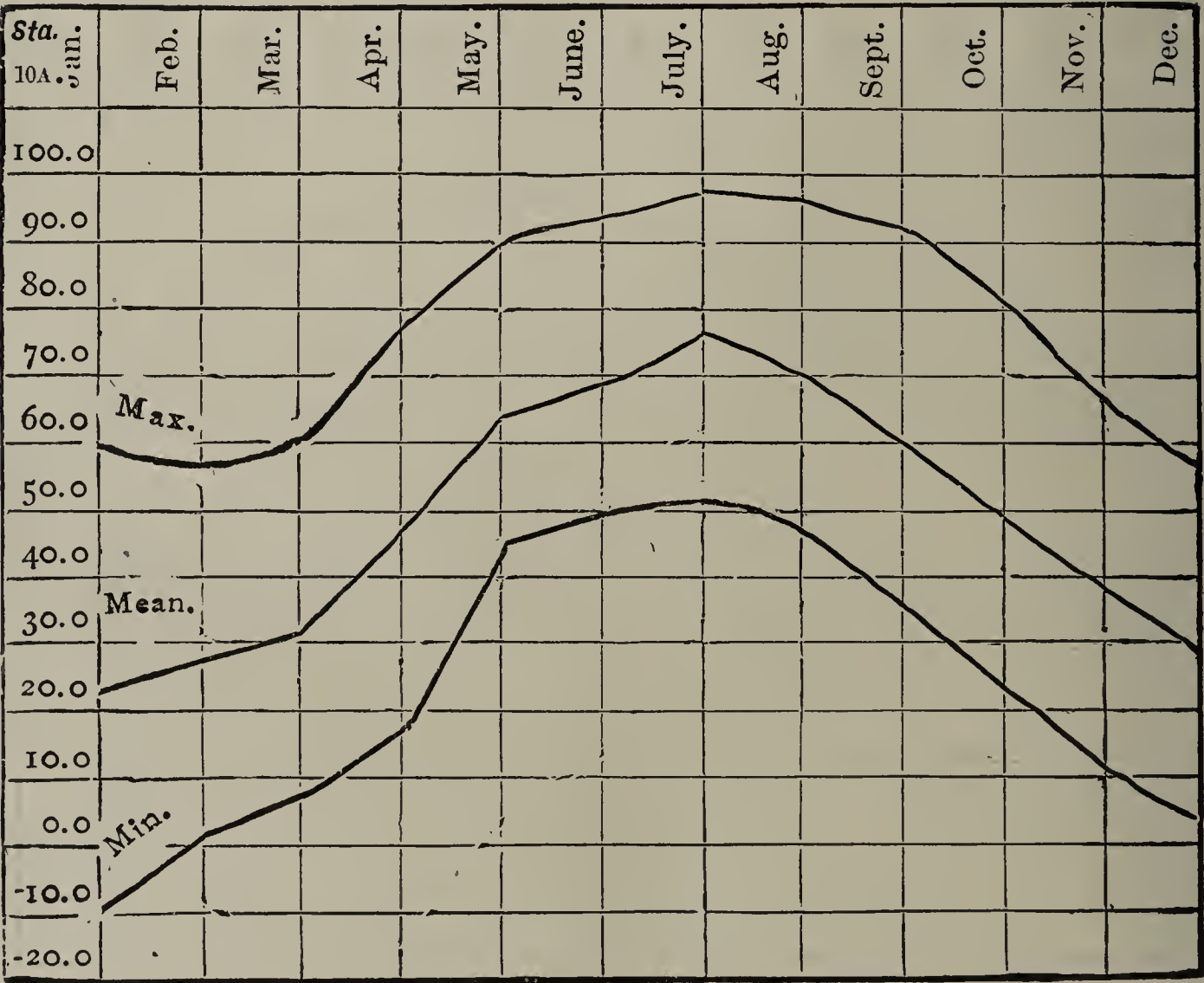
Chart showing the monthly maximum, mean and minimum temperatures at Bangorville, for the year ending December 31, 1887.



STATION No. 10A.

TOLEDO.

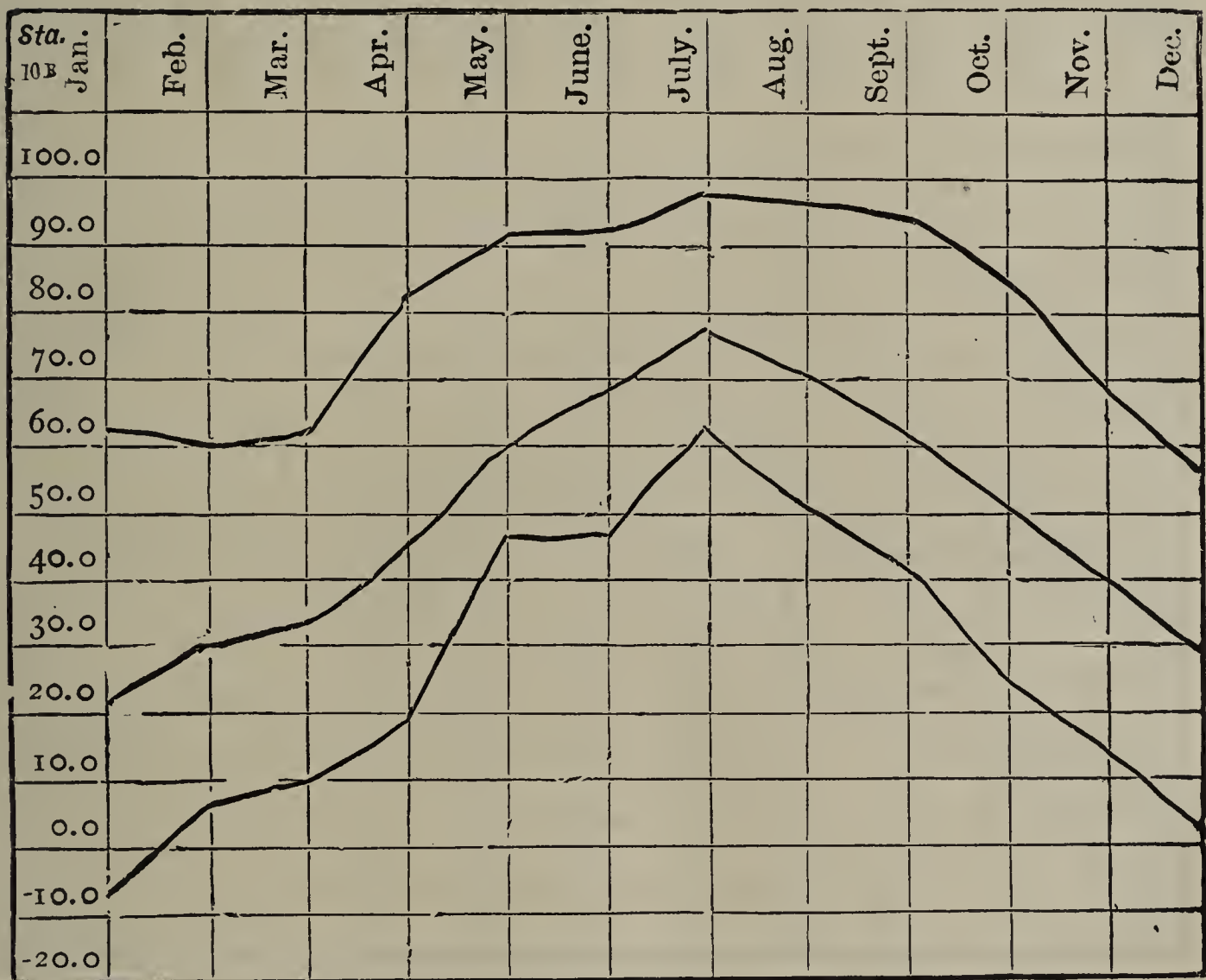
Chart showing the monthly maximum, mean and minimum temperatures at Toledo, for the year ending December 31, 1887.



STATION No. 10B.

SANDUSKY.

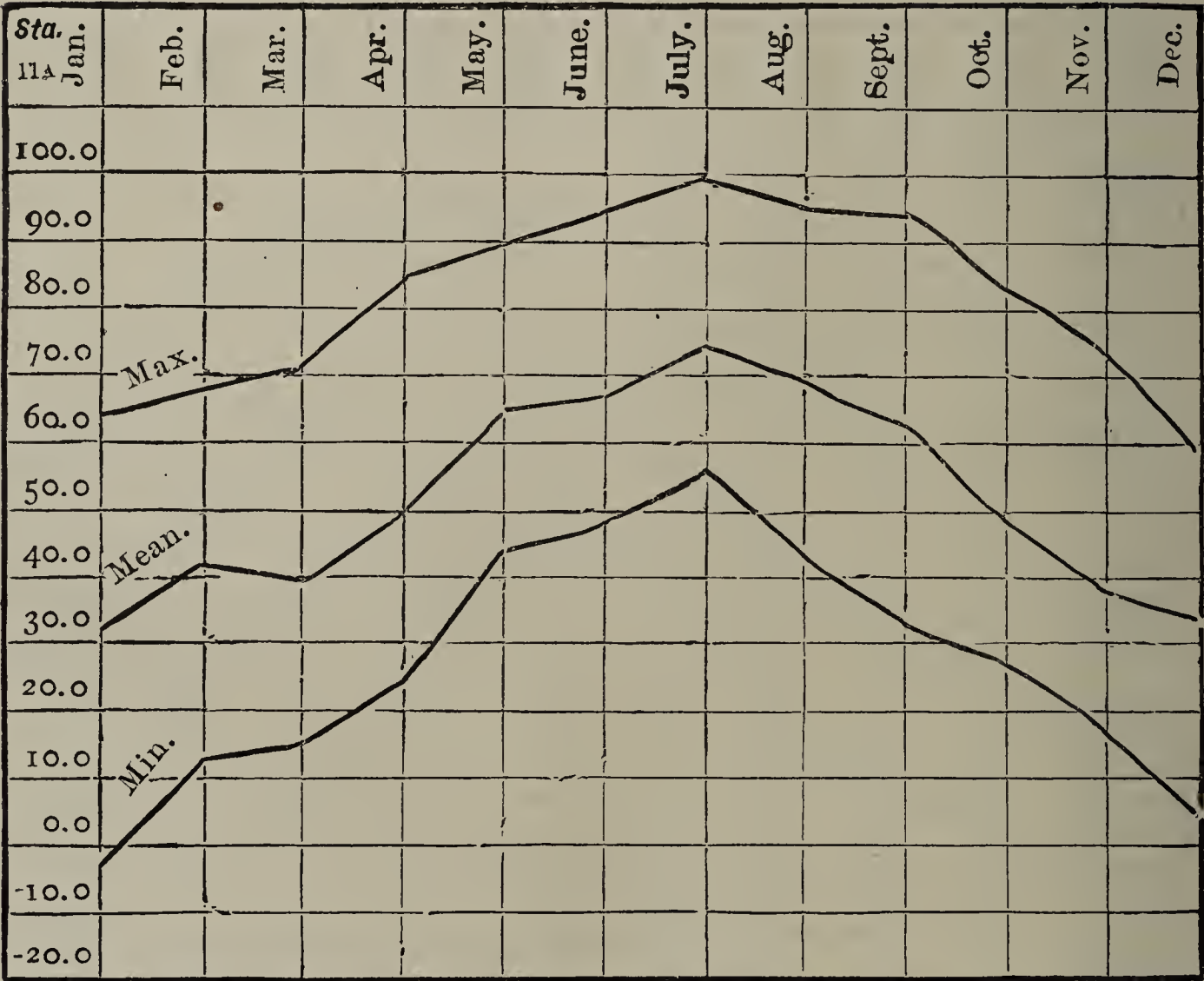
Chart showing the monthly maximum, mean and minimum temperatures at Sandusky, for the year ending December 31, 1887.



STATION No. 11A.

HANGING ROCK.

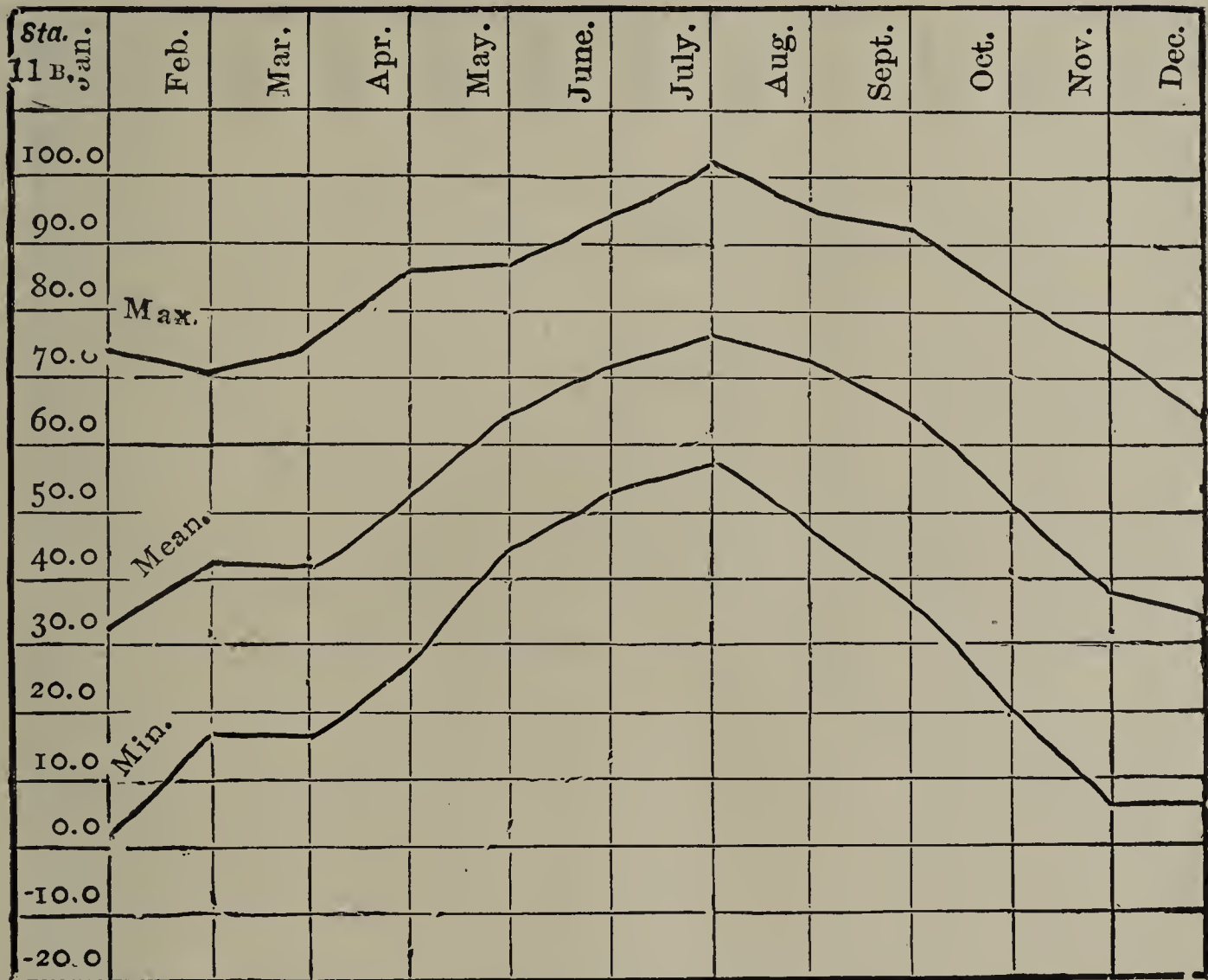
Chart showing the monthly maximum, mean and minimum temperatures at Hanging Rock, for the year ending December 31, 1887.



STATION No. 11B.

PORTSMOUTH.

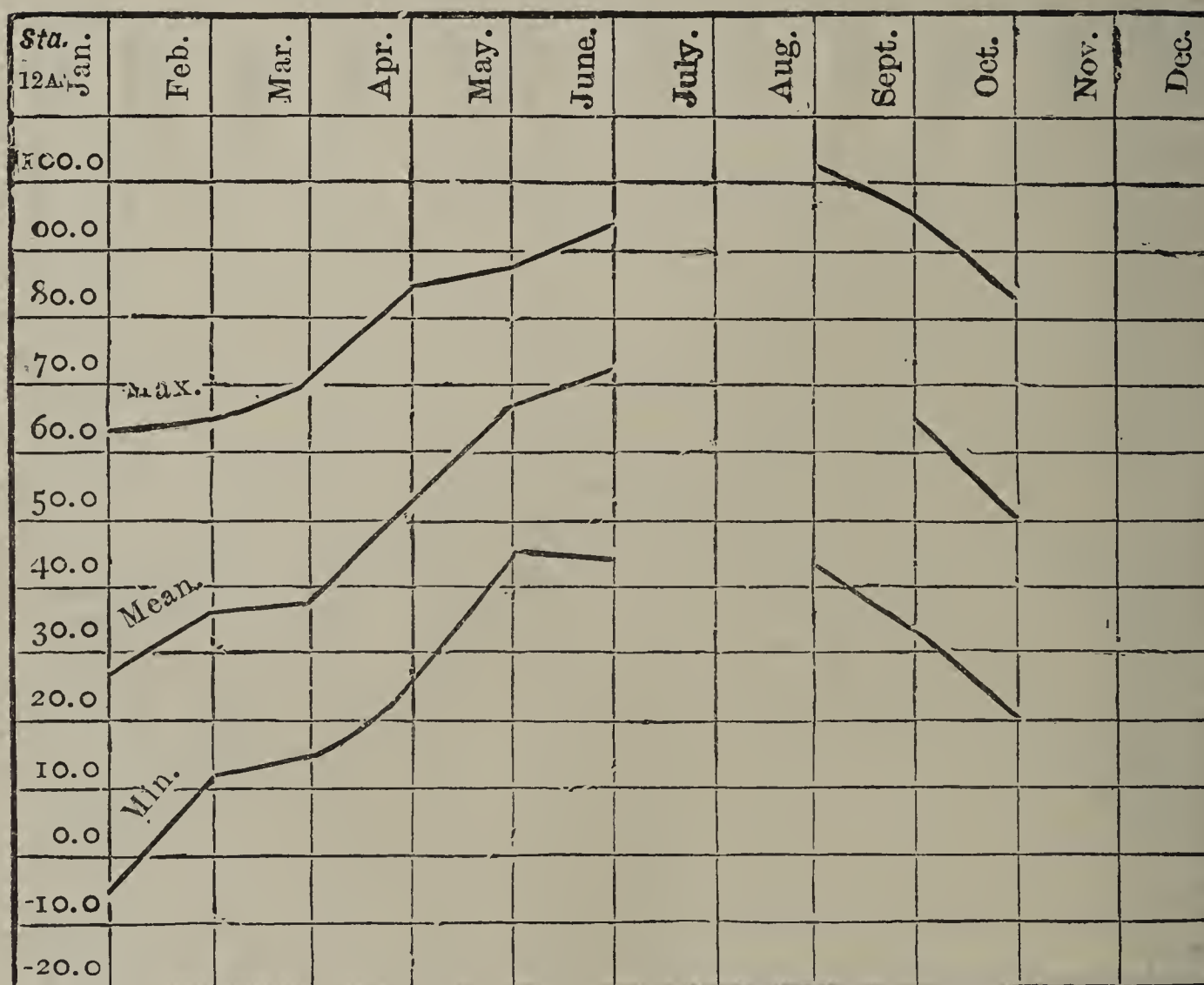
Chart showing the monthly maximum, mean and minimum temperatures at
Portsmouth, for the year ending December 31, 1887.



STATION No. 12A.

WASHINGTON C. H.

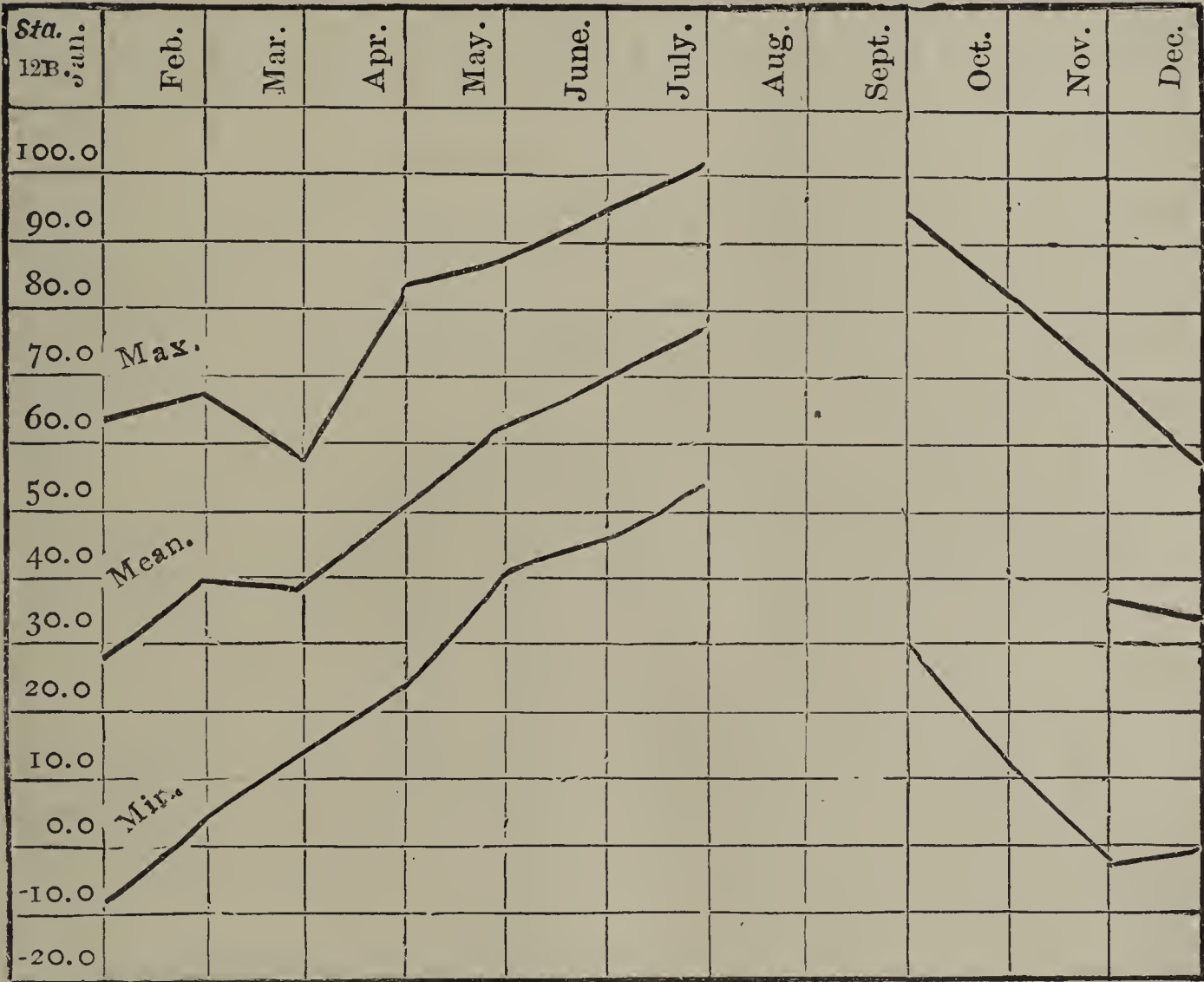
Chart showing the monthly maximum, mean and minimum temperatures at
Washington C. H., for the year ending December 31, 1887.



STATION No. 12B.

WAVERLY.

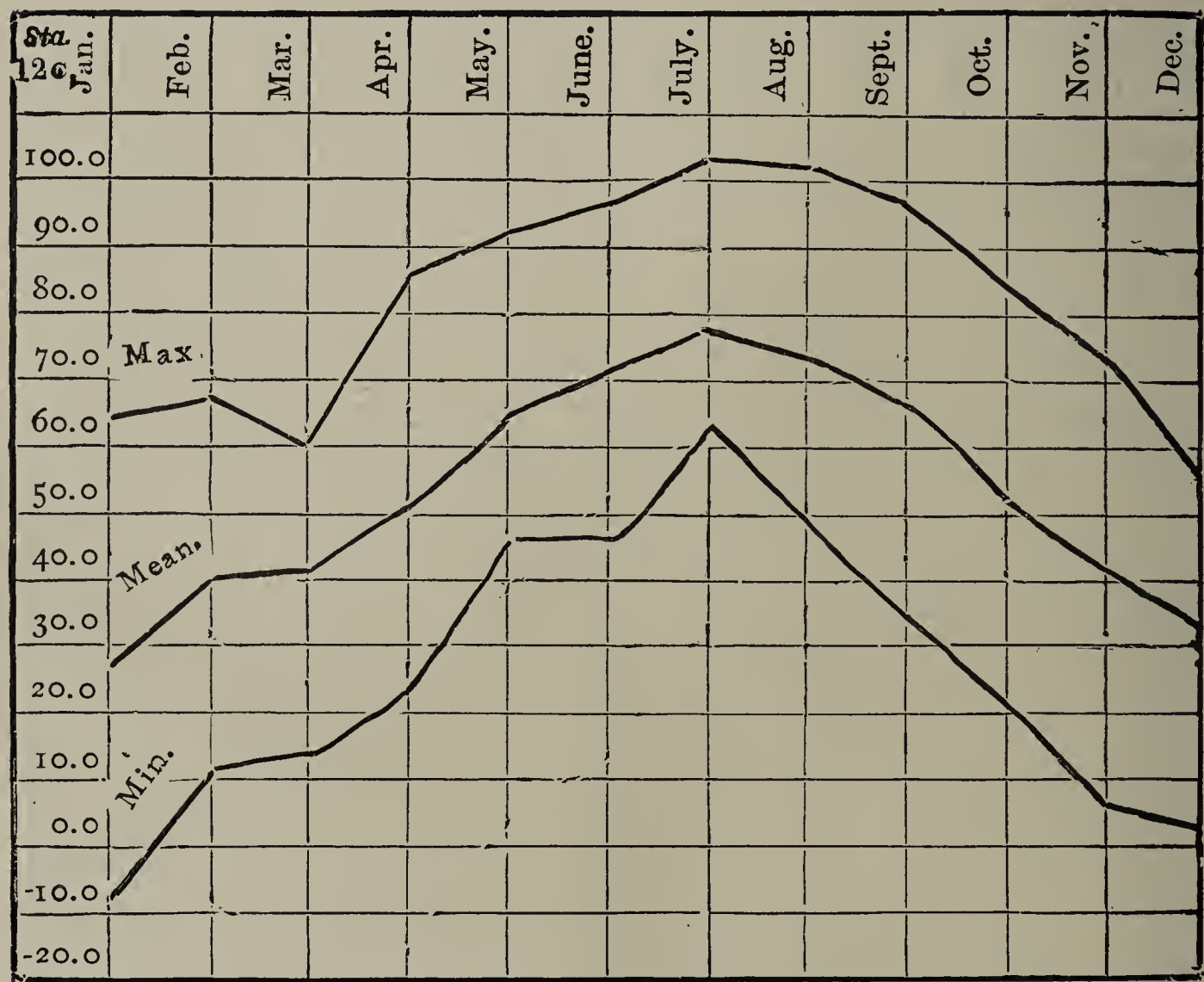
Chart showing the monthly maximum, mean and minimum temperatures at Waverly, for the year ending December 31, 1887.



STATION No. 12C.

GEORGETOWN.

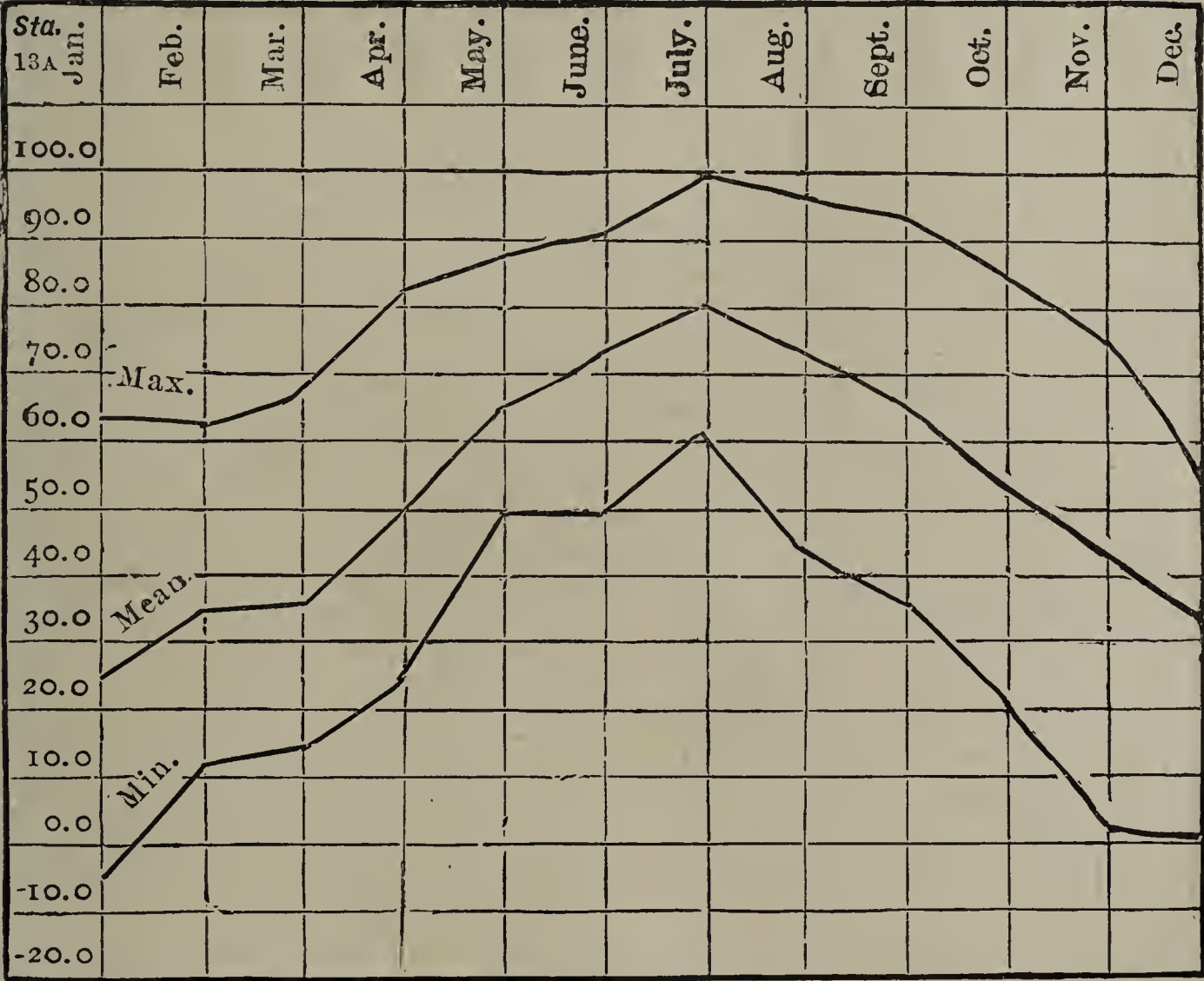
Chart showing the monthly maximum, mean and minimum temperatures at Georgetown, for the year ending December 31, 1887.



STATION No. 13A.

COLUMBUS.

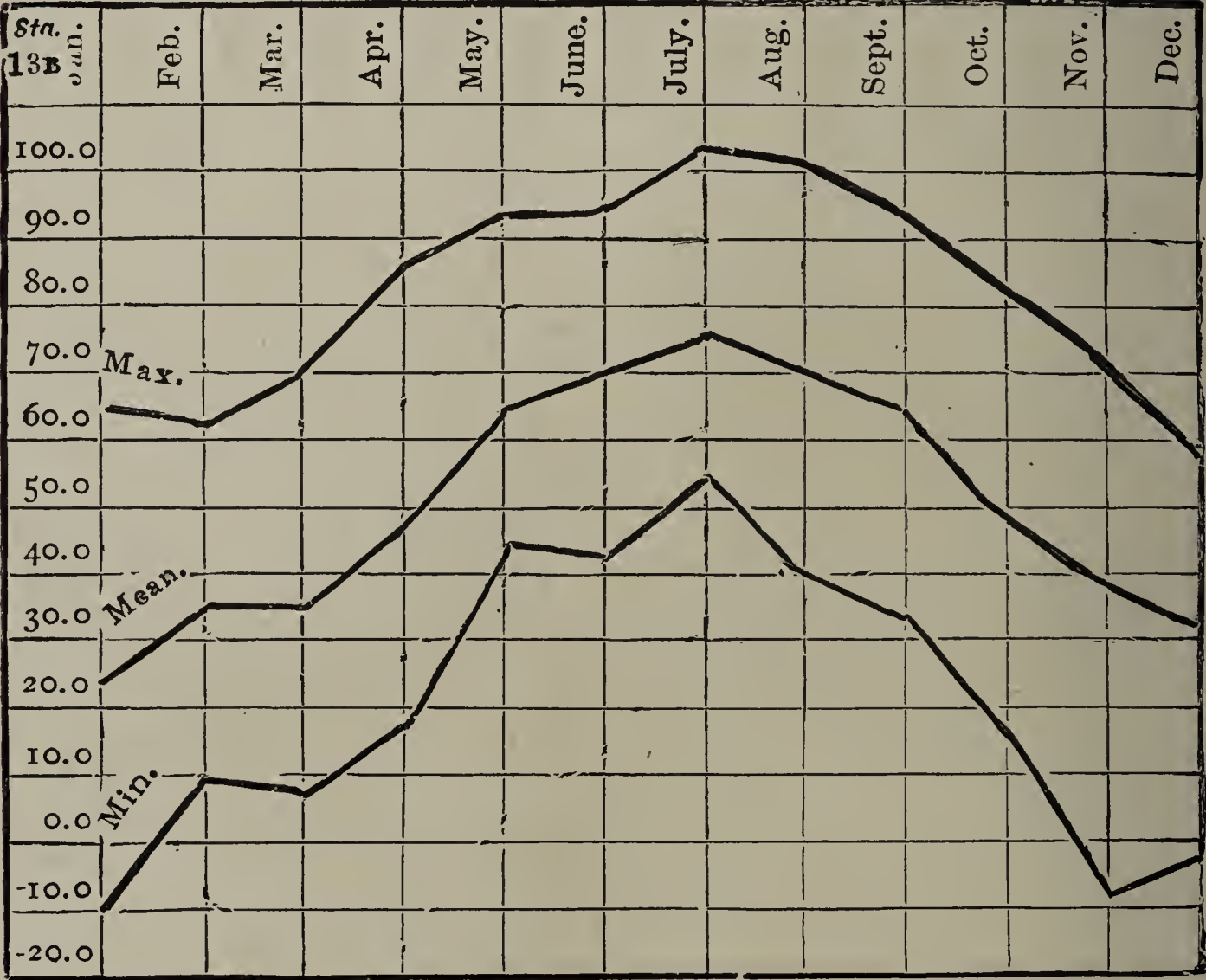
Chart showing the monthly maximum, mean and minimum temperatures at Columbus, for the year ending December 31, 1887.



STATION No. 13B.

OHIO STATE UNIVERSITY.

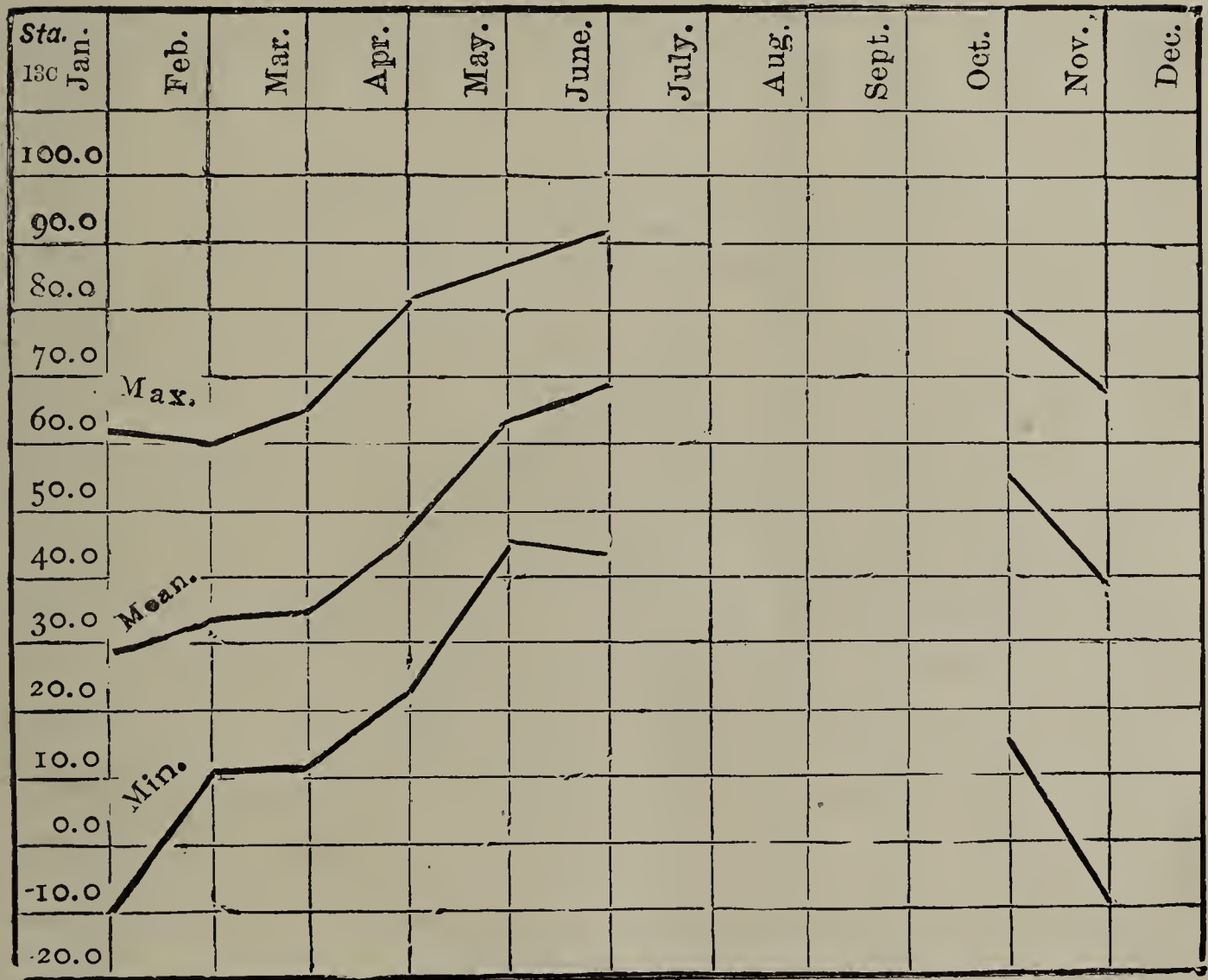
Chart showing the monthly maximum, mean and minimum temperatures at Ohio State University, for the year ending December 31, 1887.



STATION No. 13C.

WESTERVILLE.

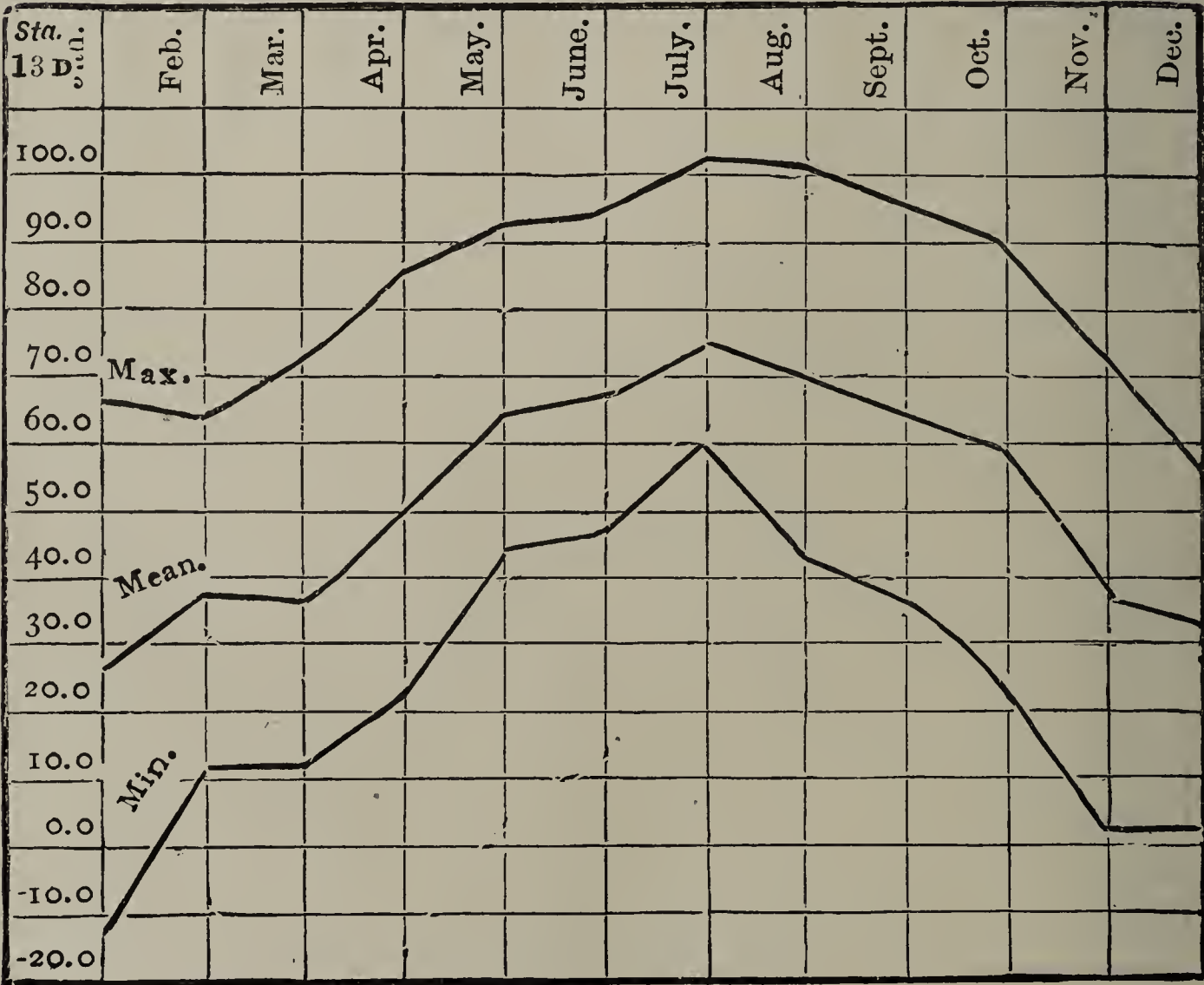
Chart showing the monthly maximum, mean and minimum temperatures at Westerville, for the year ending December 31, 1887.



STATION No. 13D.

LOGAN.

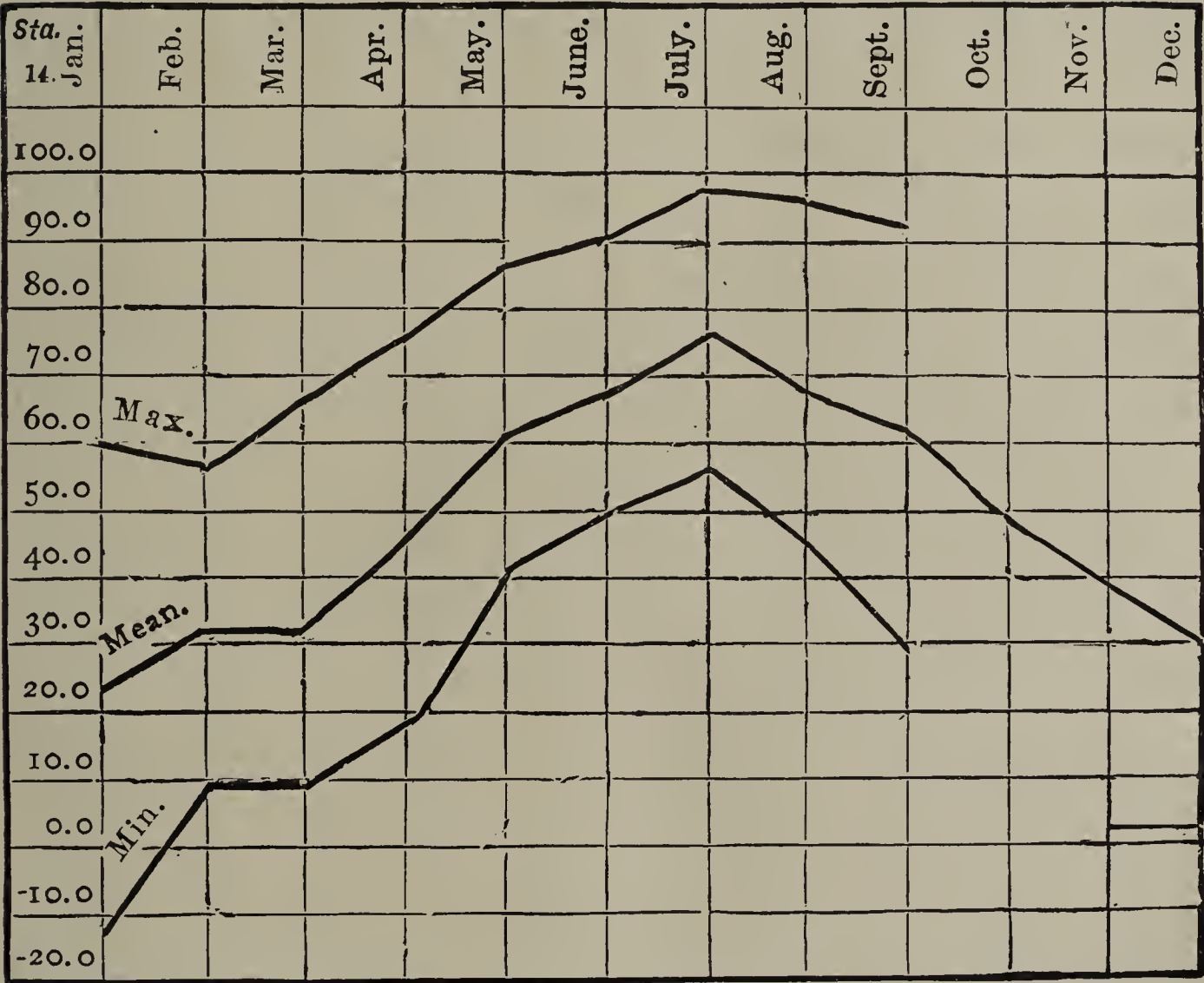
Chart showing the monthly maximum, mean and minimum temperatures at Logan, for the year ending December 31, 1887.



STATION No. 14.

OBERLIN.

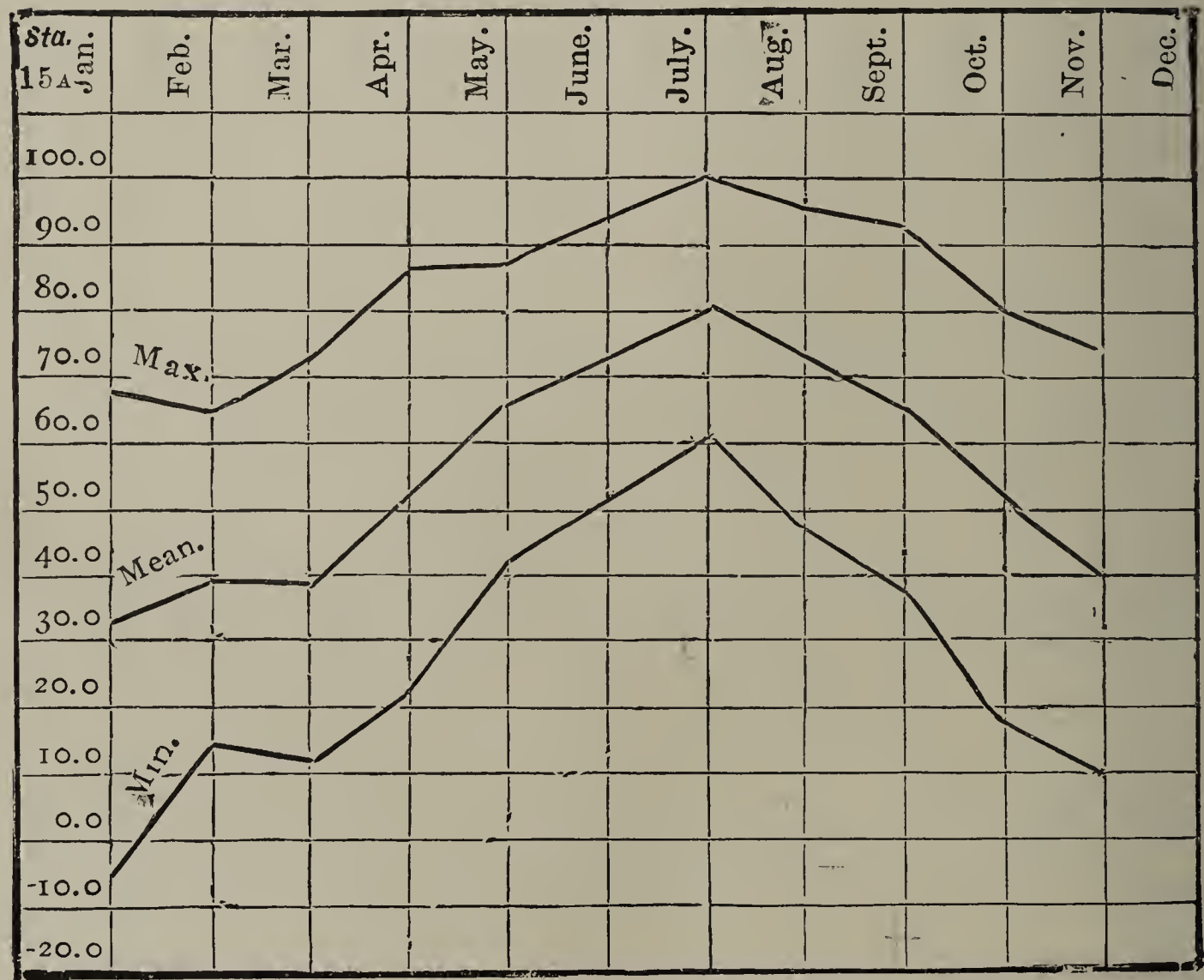
Chart showing the monthly maximum, mean and minimum temperatures at Oberlin, for the year ending December 31, 1887.



STATION No. 15A.

MARIETTA.

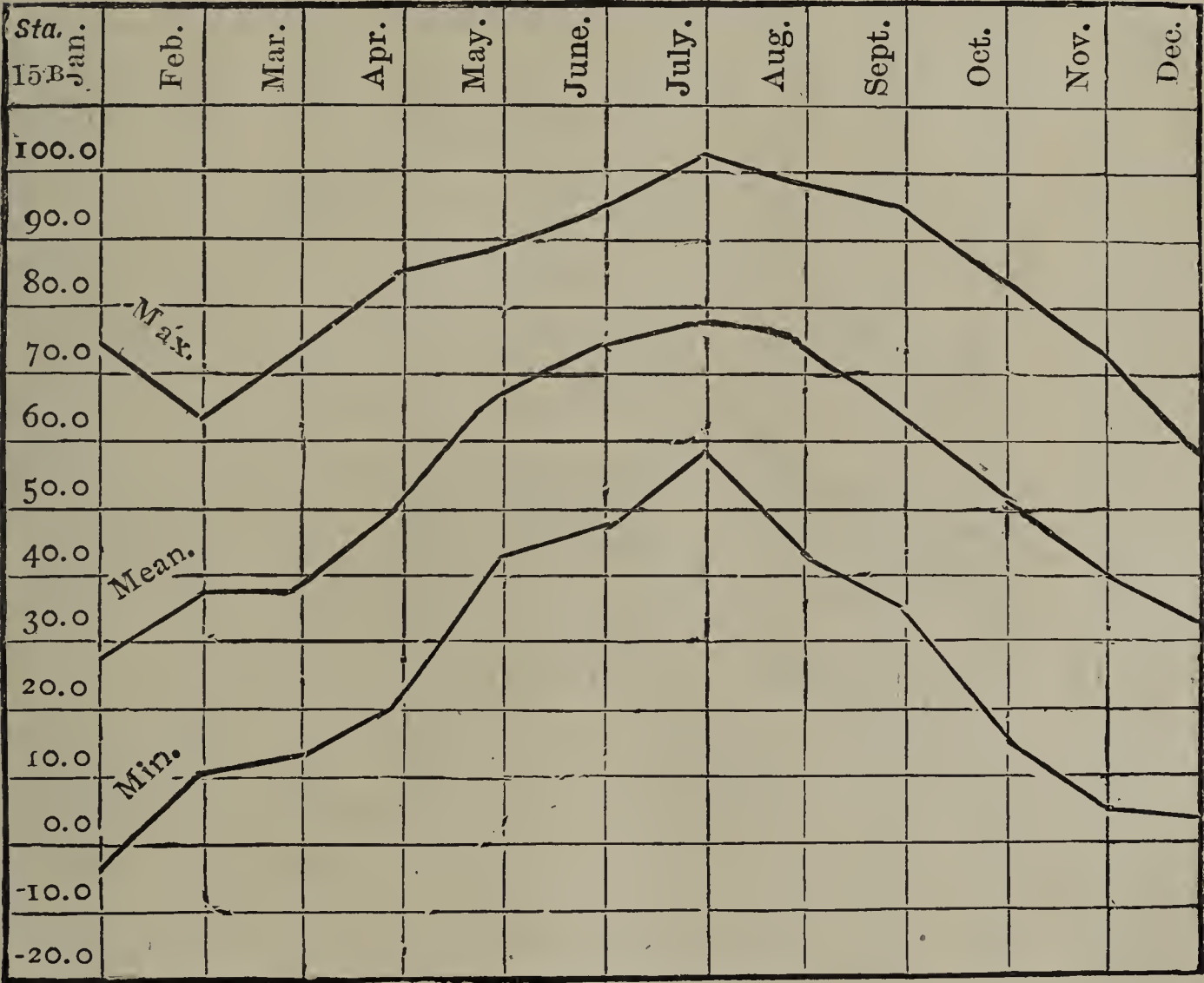
Chart showing the monthly maximum, mean and minimum temperatures at Marietta, for the year ending December, 31, 1887.



STATION No. 15B.

McCONNELLSVILLE.

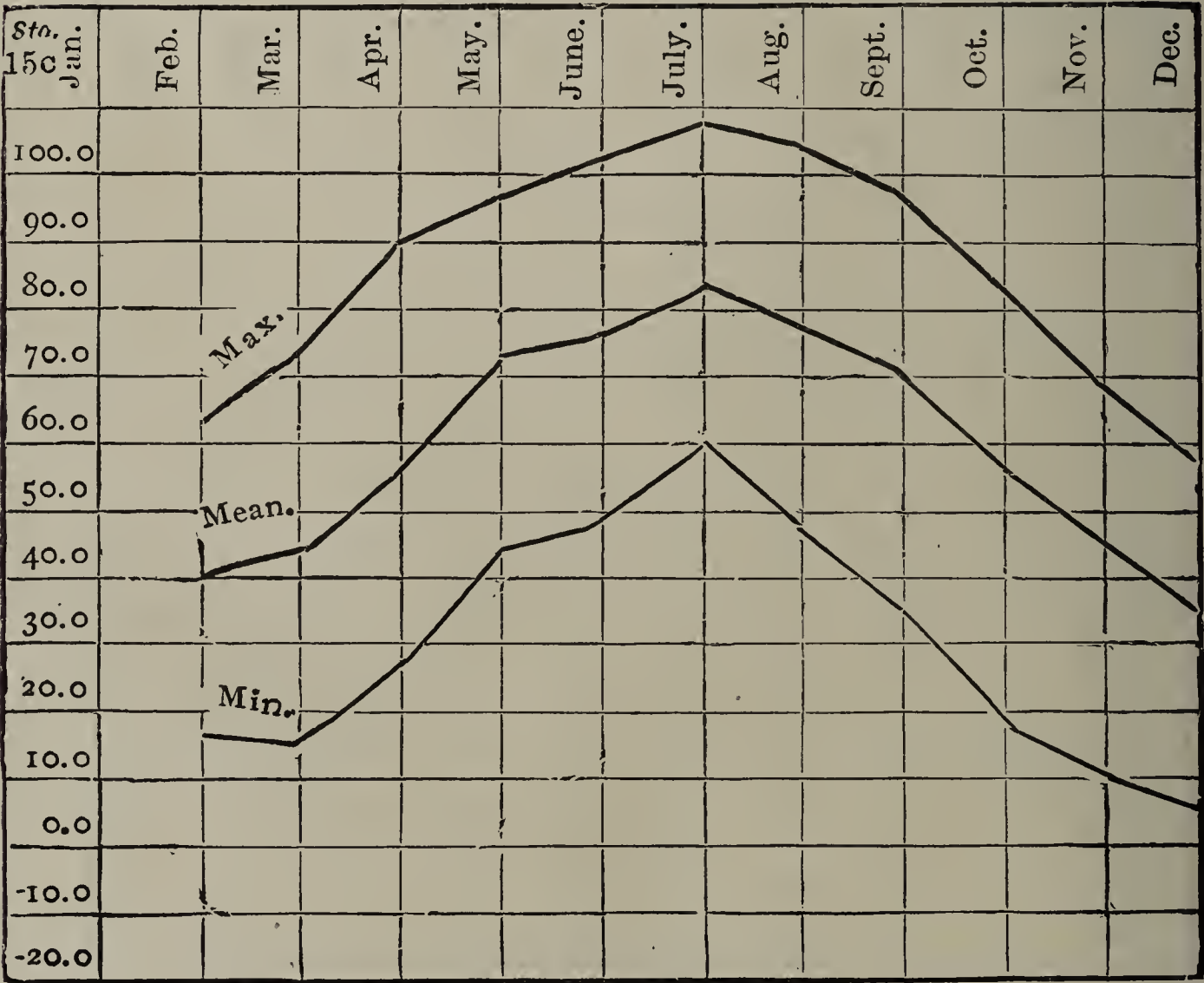
Chart showing the monthly maximum, mean and minimum temperatures at
McConnelsville, for the year ending December 31, 1887.



STATION No. 15C.

POMEROY.

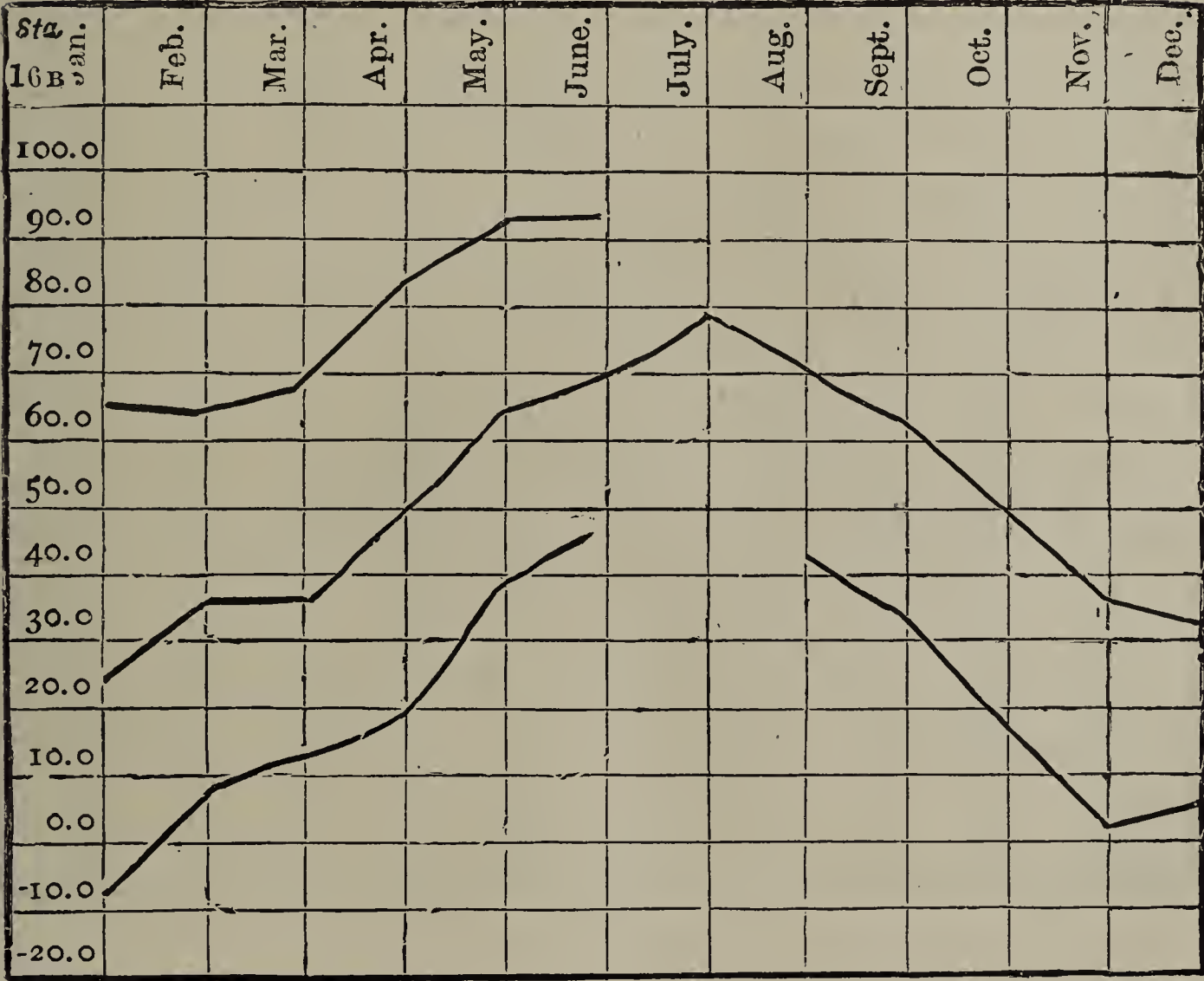
Chart showing the monthly maximum, mean and minimum temperatures at Pomeroy, for the year ending December 31, 1887.



STATION No. 16B.

NEWCOMERSTOWN.

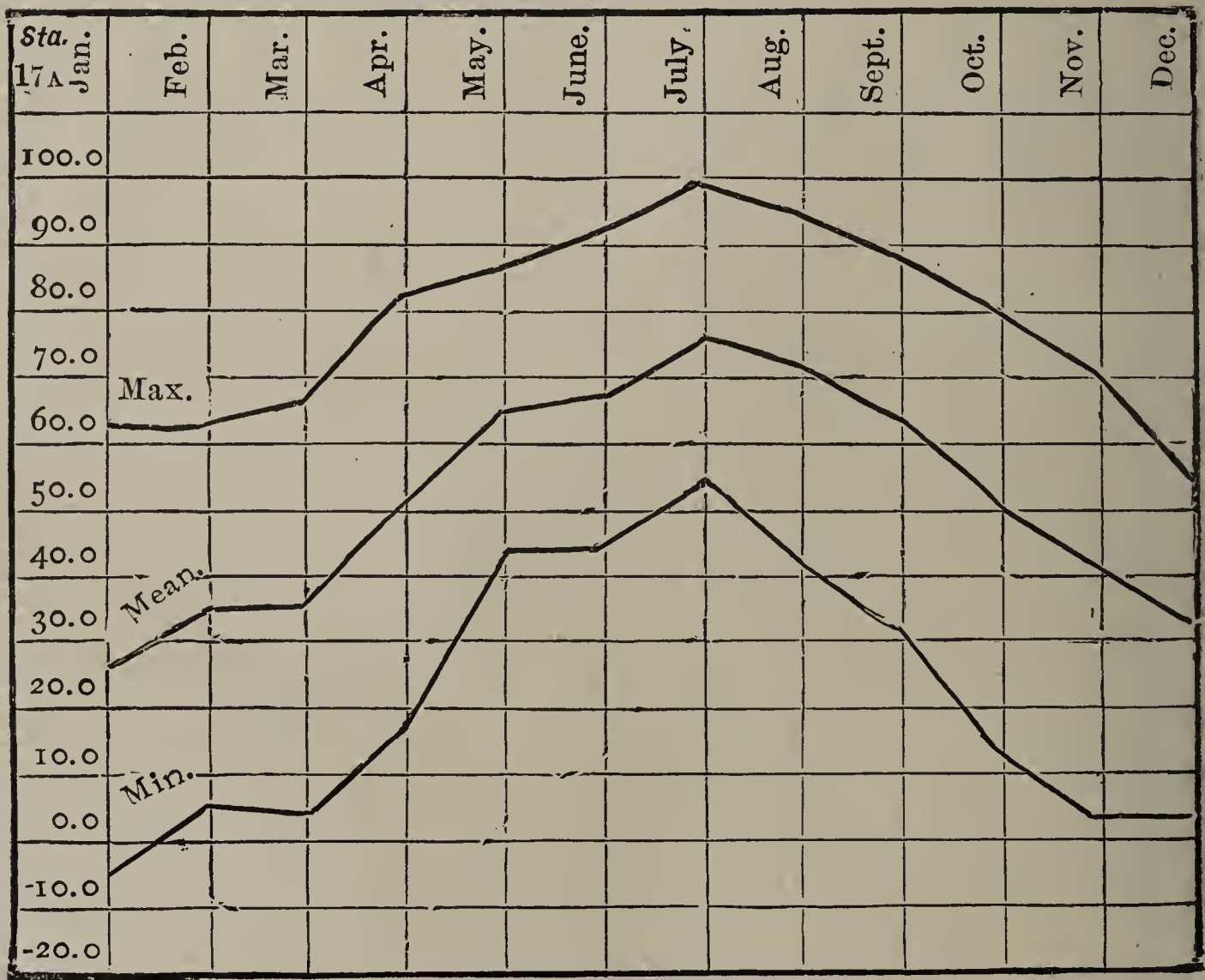
Chart showing the monthly maximum, mean and minimum temperatures at Newcomerstown, for the year ending December 31st, 1887.



STATION No. 17A.

QUAKER CITY.

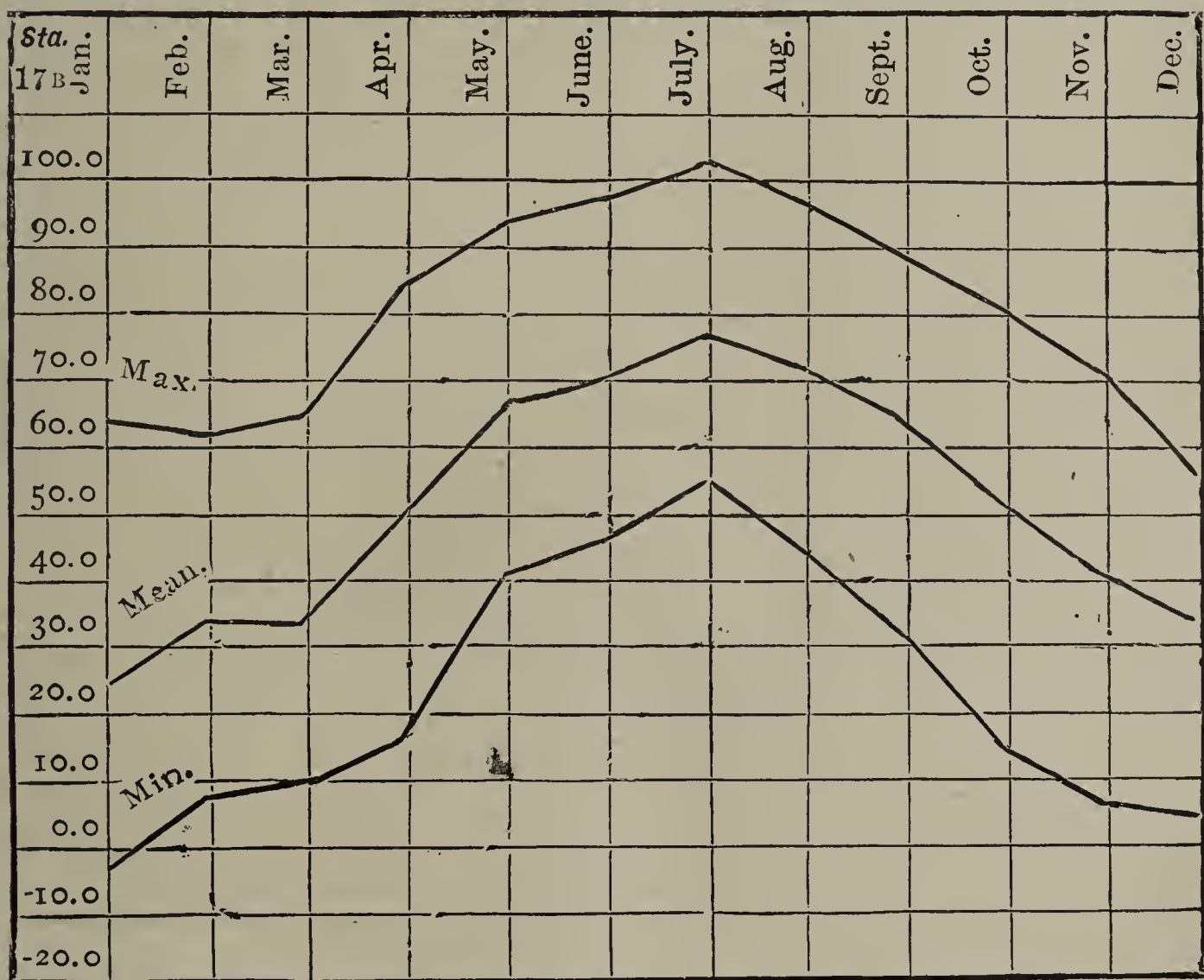
Chart showing the monthly maximum, mean and minimum temperatures at Quaker City, for the year ending December 31, 1887.



STATION No. 17B.

NEW ALEXANDRIA.

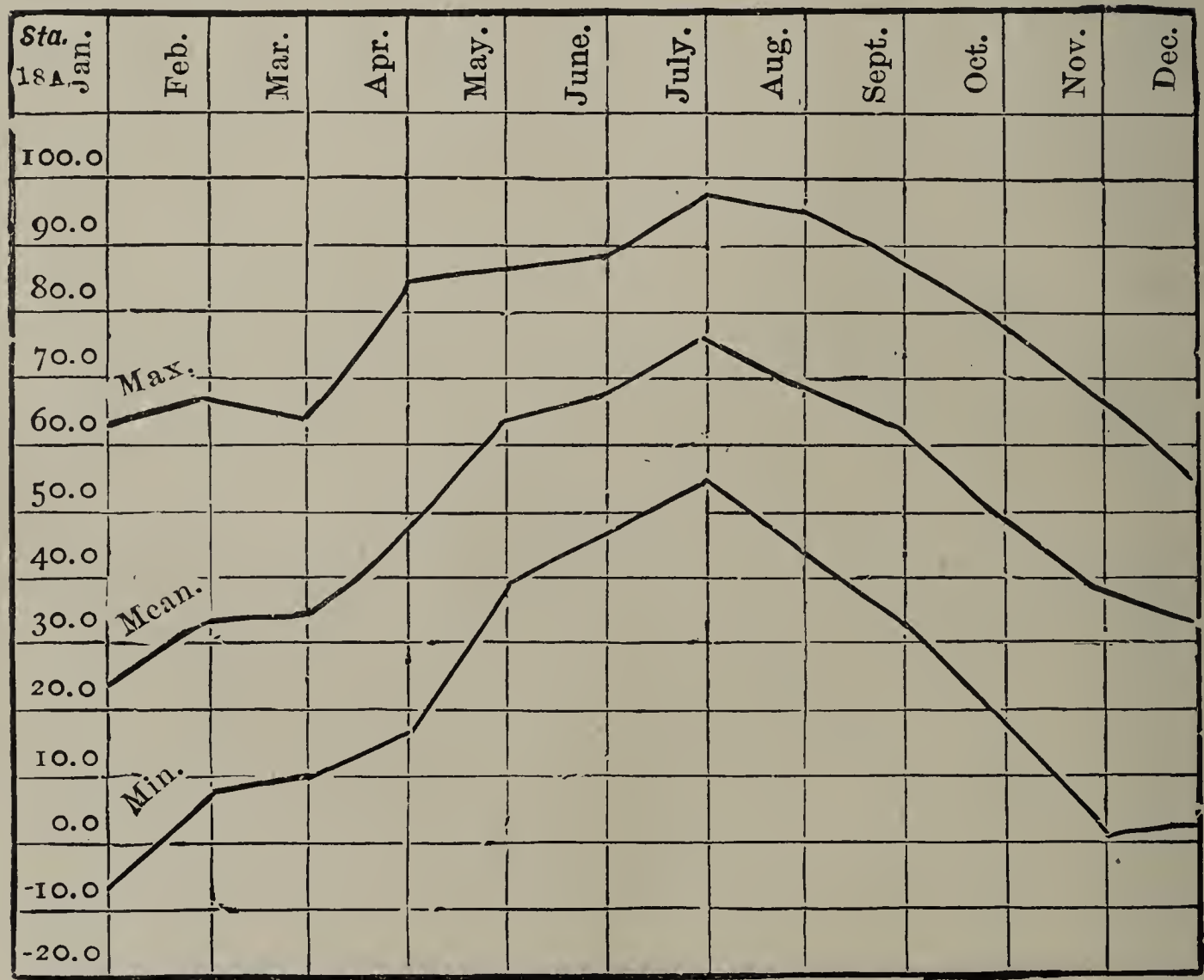
Chart showing the monthly maximum, mean and minimum temperatures at New Alexandria, for the year ending December 31, 1887.



STATION No. 18A.

CANTON.

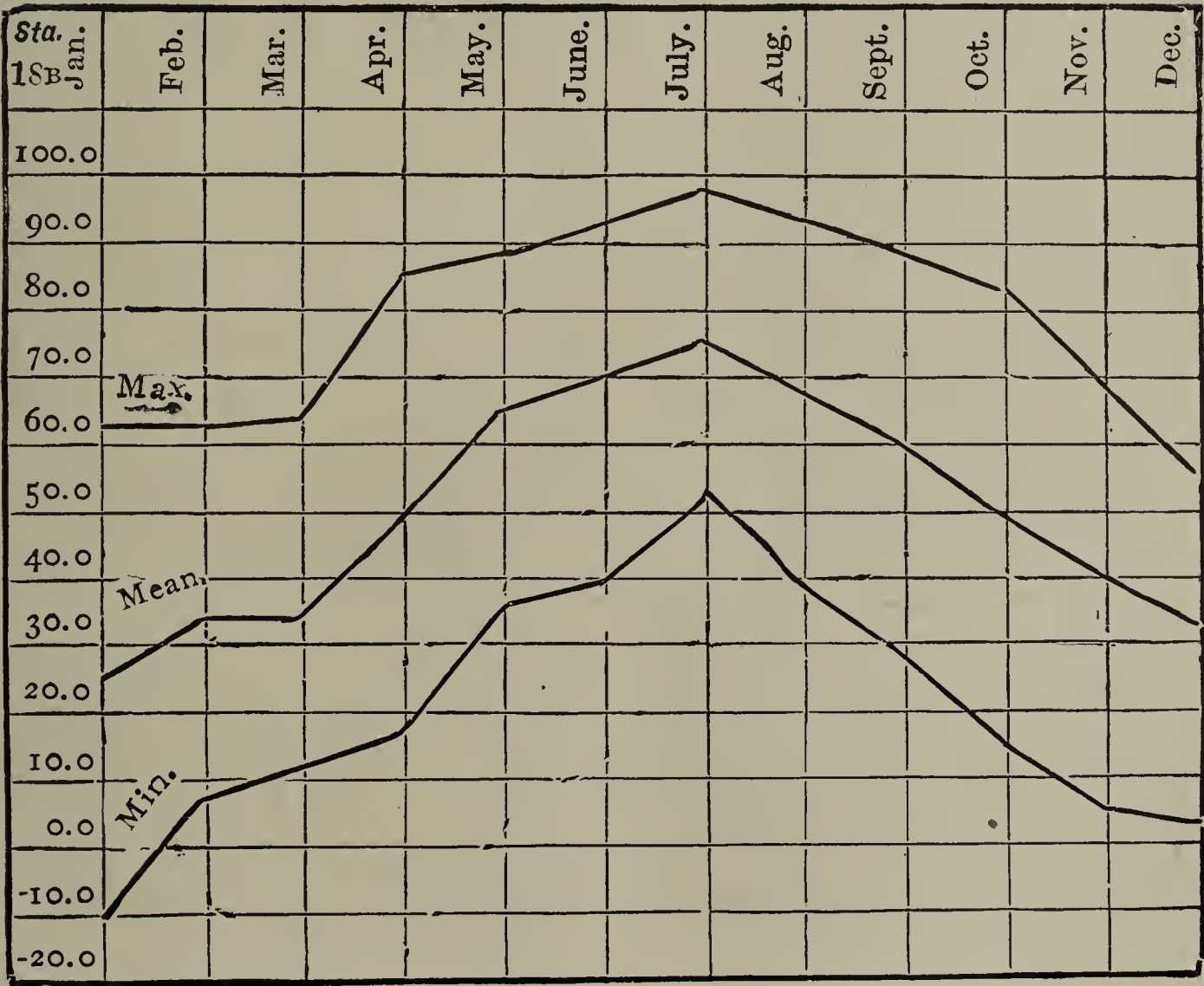
Chart showing the monthly maximum, mean and minimum temperatures at Canton, for the year ending December 31, 1887.



STATION No. 18B.

YOUNGSTOWN.

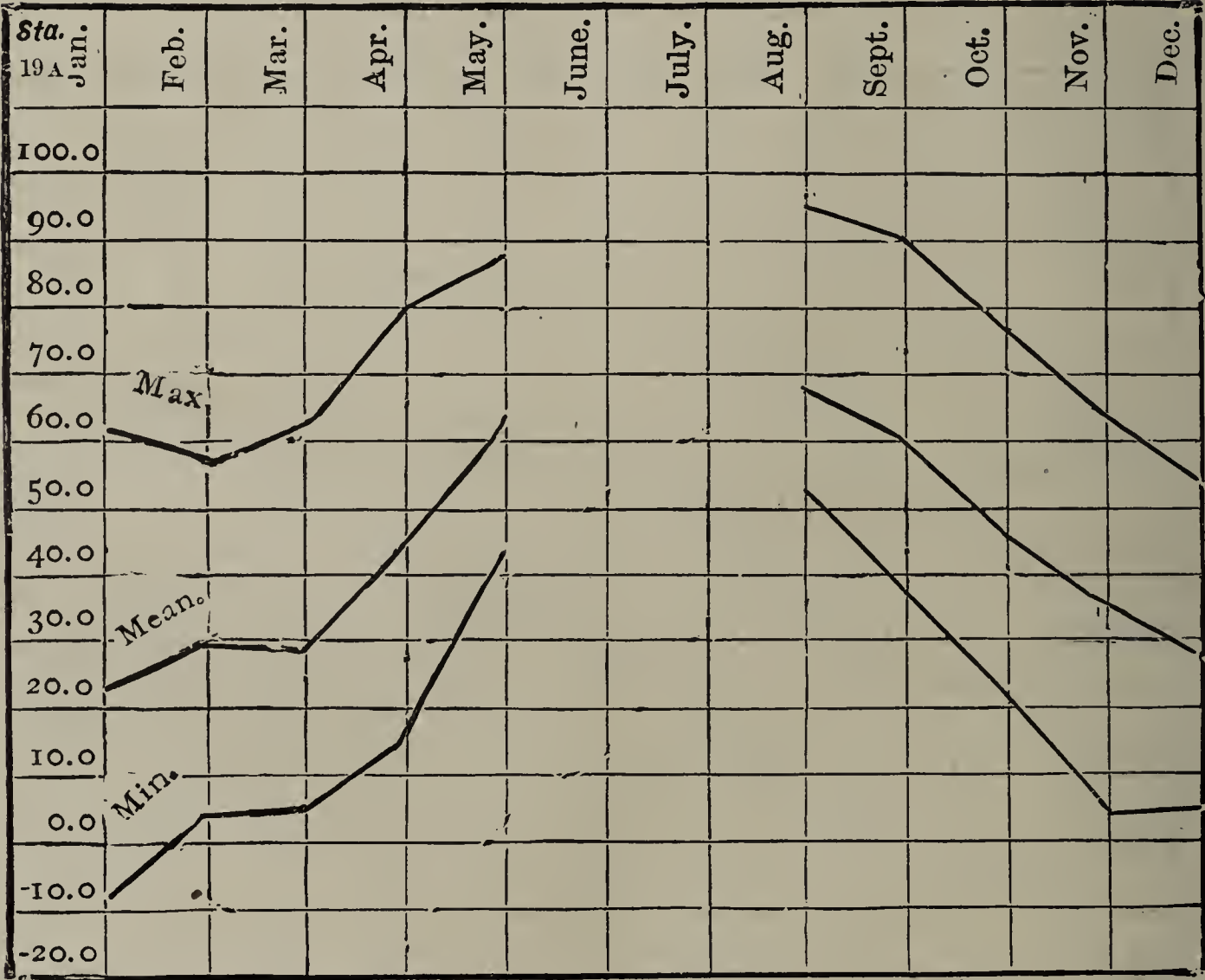
Chart showing the monthly maximum, mean and minimum temperatures at
Youngstown, for the year ending December 31, 1887.



STATION No. 19A.

HIRAM.

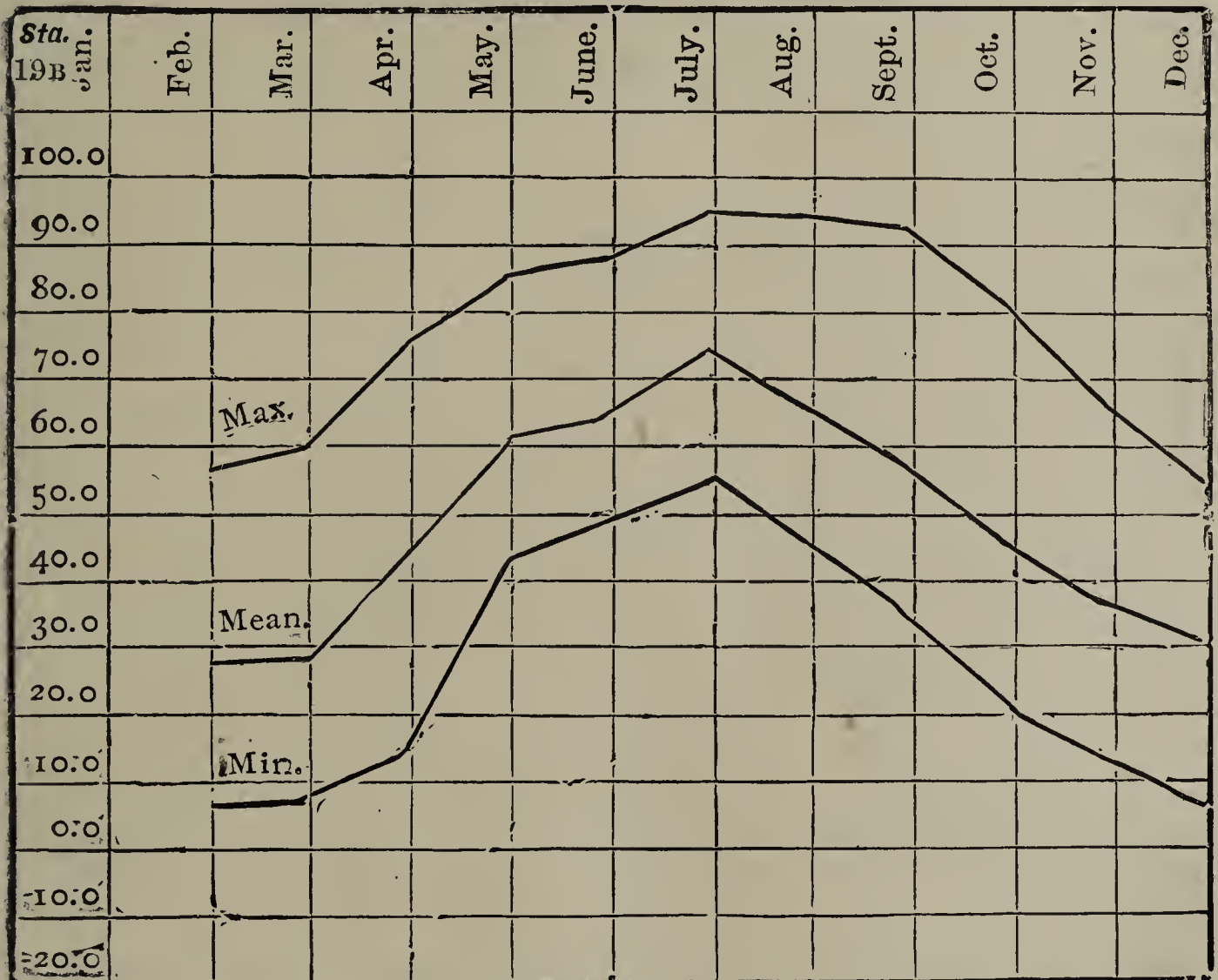
Chart showing the monthly maximum, mean and minimum temperatures at Hiram, for the year ending December 31, 1887.



STATION No. 19B.

JEFFERSON.

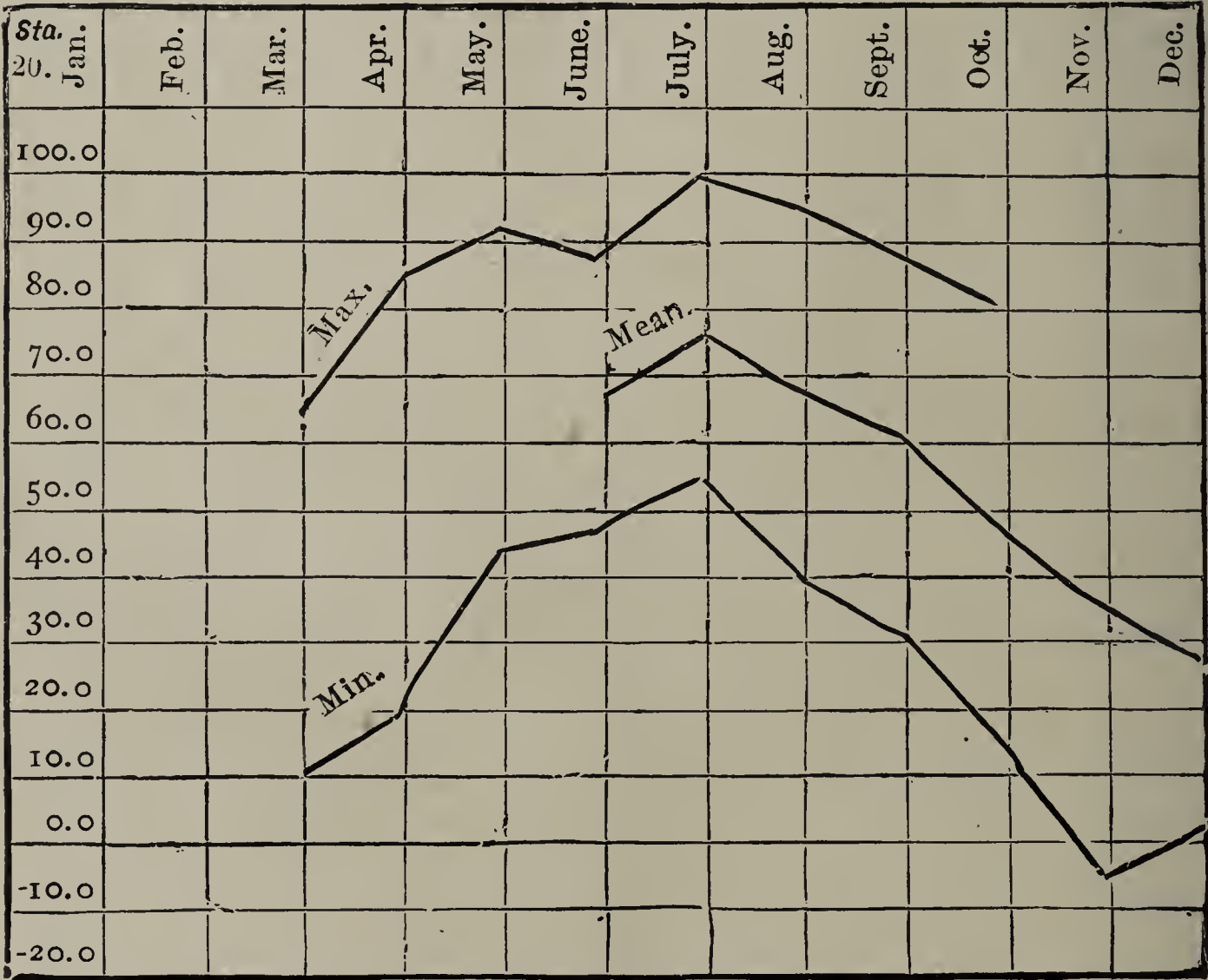
Chart showing the monthly maximum, mean and minimum temperatures at Jefferson, for the year ending December 31, 1887.



STATION No. 20.

WOOSTER.

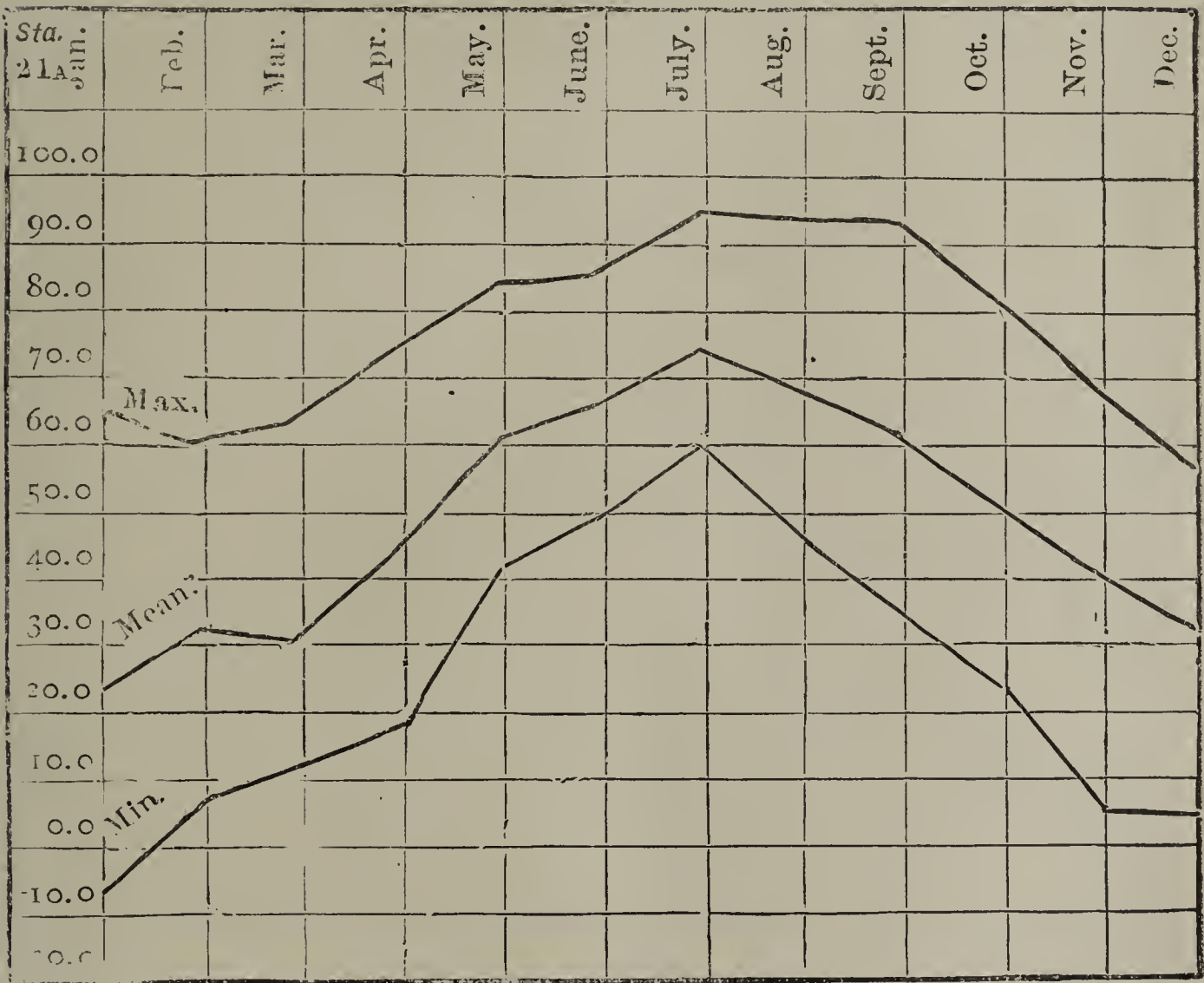
Chart showing the monthly maximum, mean and minimum temperatures at Wooster, for the year ending December 31, 1887.



STATION No. 21A.

CLEVELAND.

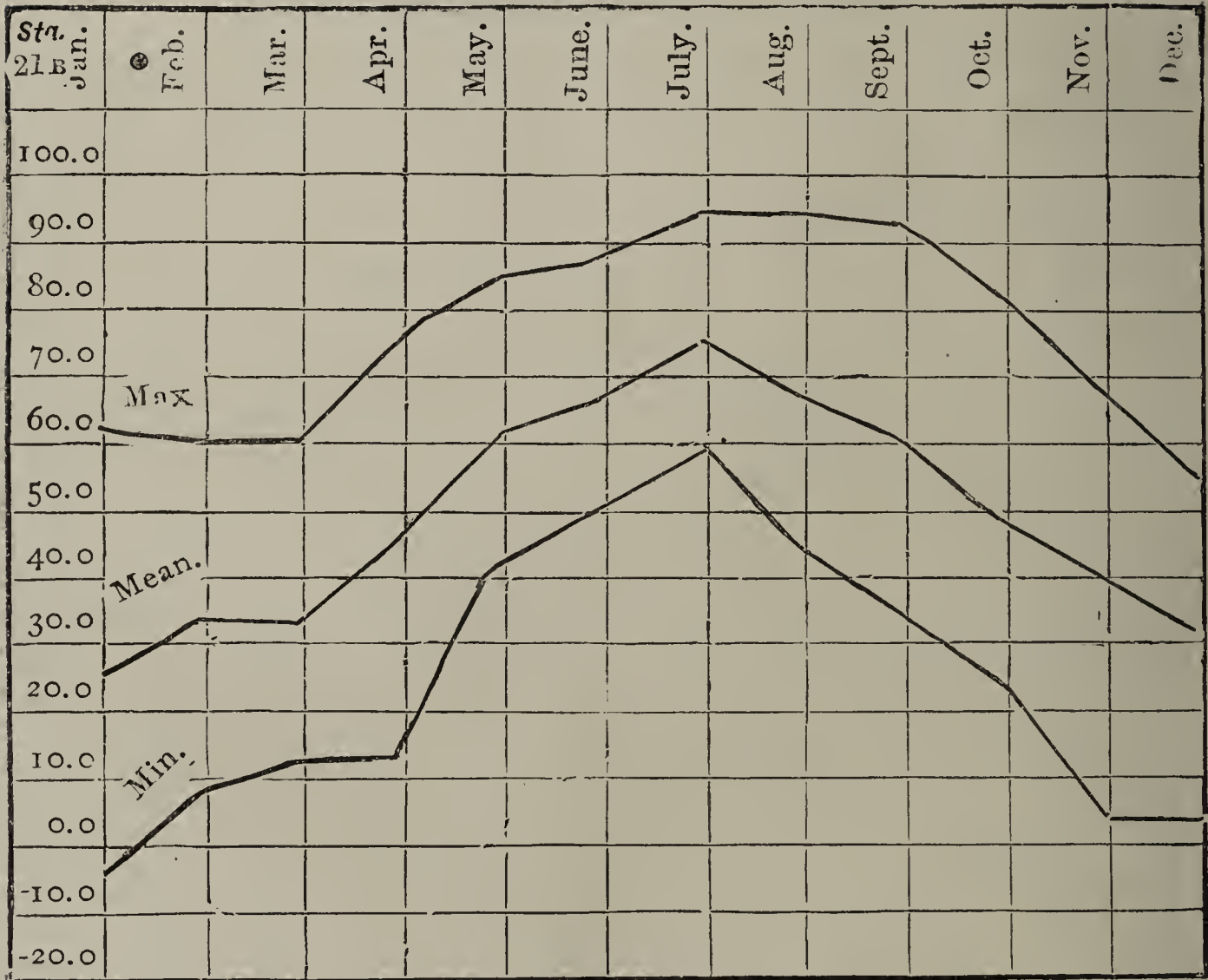
Chart showing the monthly maximum, mean and minimum temperatures at
Cleveland, for the year ending December 31, 1887.



STATION No. 21B.

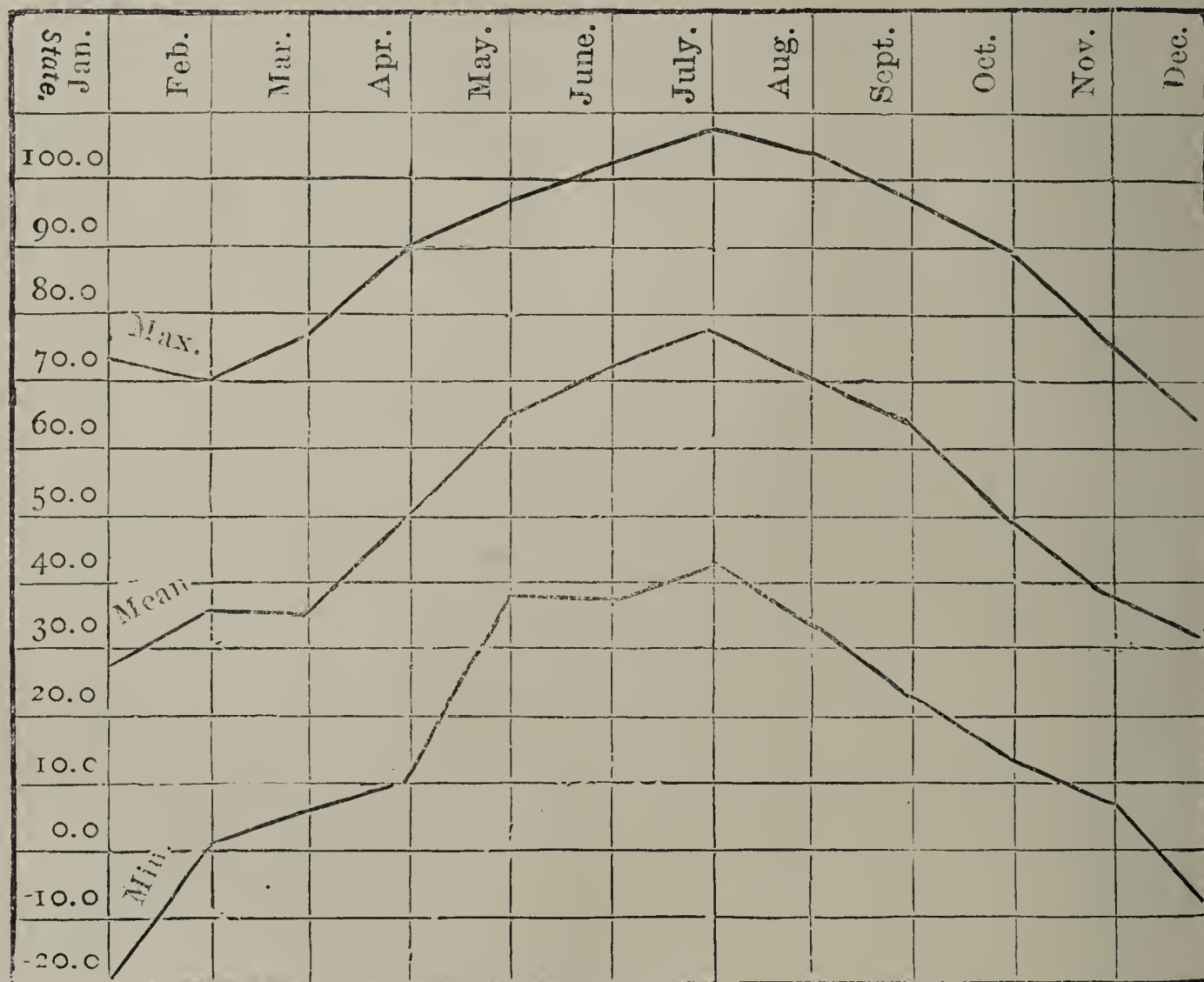
CLEVELAND.

Chart showing the monthly maximum, mean and minimum temperatures at
Cleveland, for the year ending December 31, 1887.



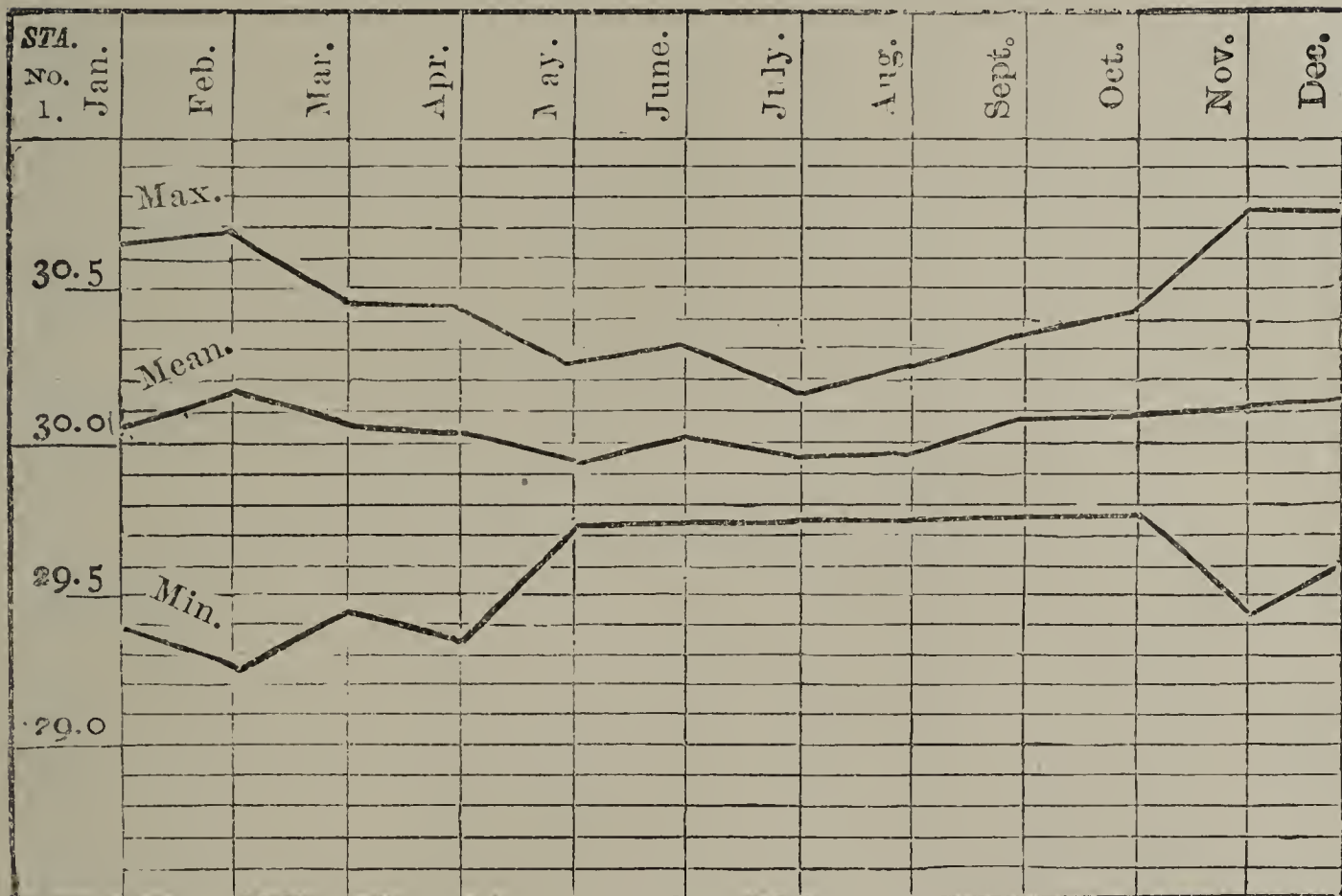
FOR THE STATE.

Chart showing the monthly maximum, mean and minimum temperatures for the State, for the year ending December 31, 1887.



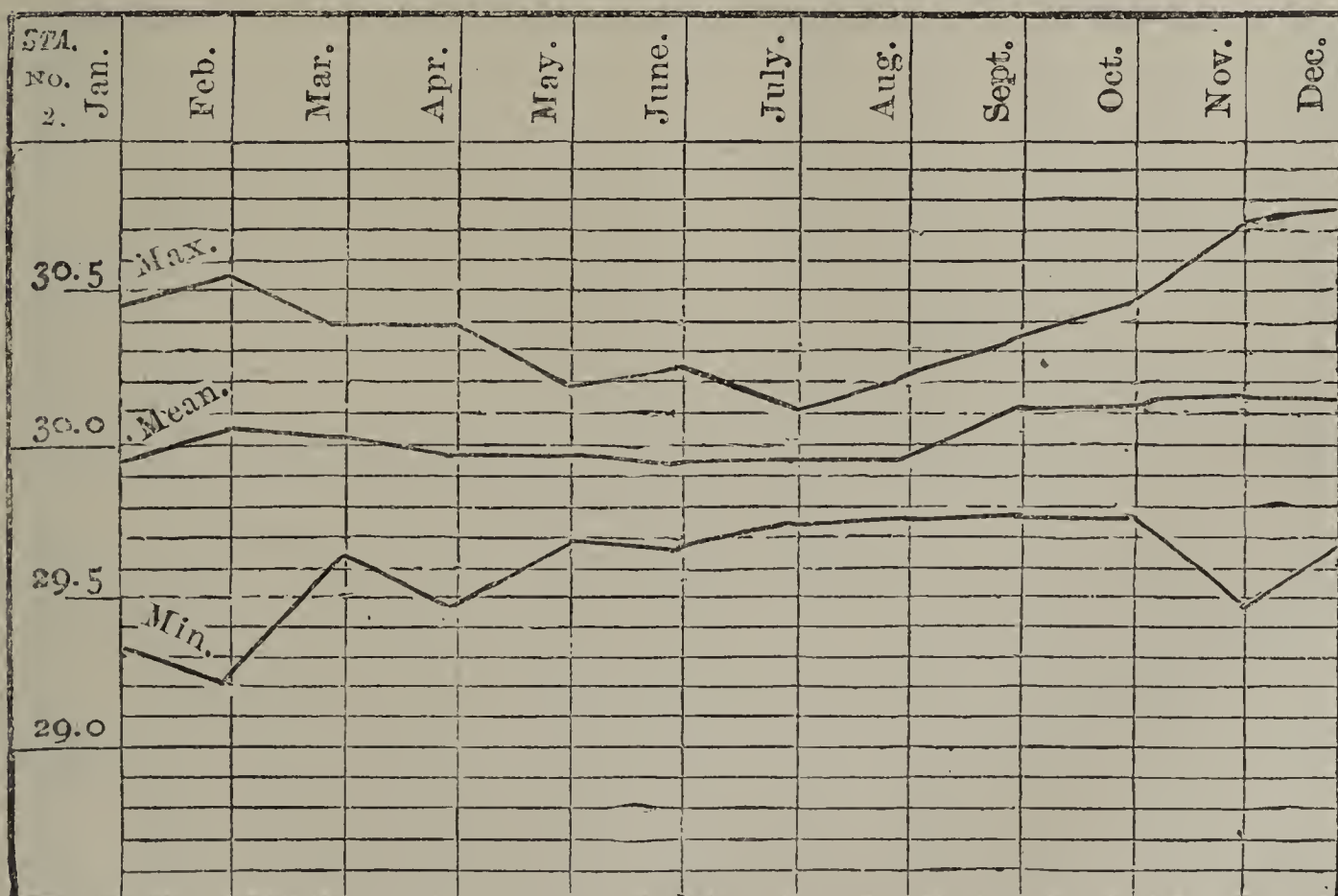
STATION No. 1.—CINCINNATI.

Chart showing the monthly maximum, mean and minimum barometer at Cincinnati, for the year ending December 31, 1887.



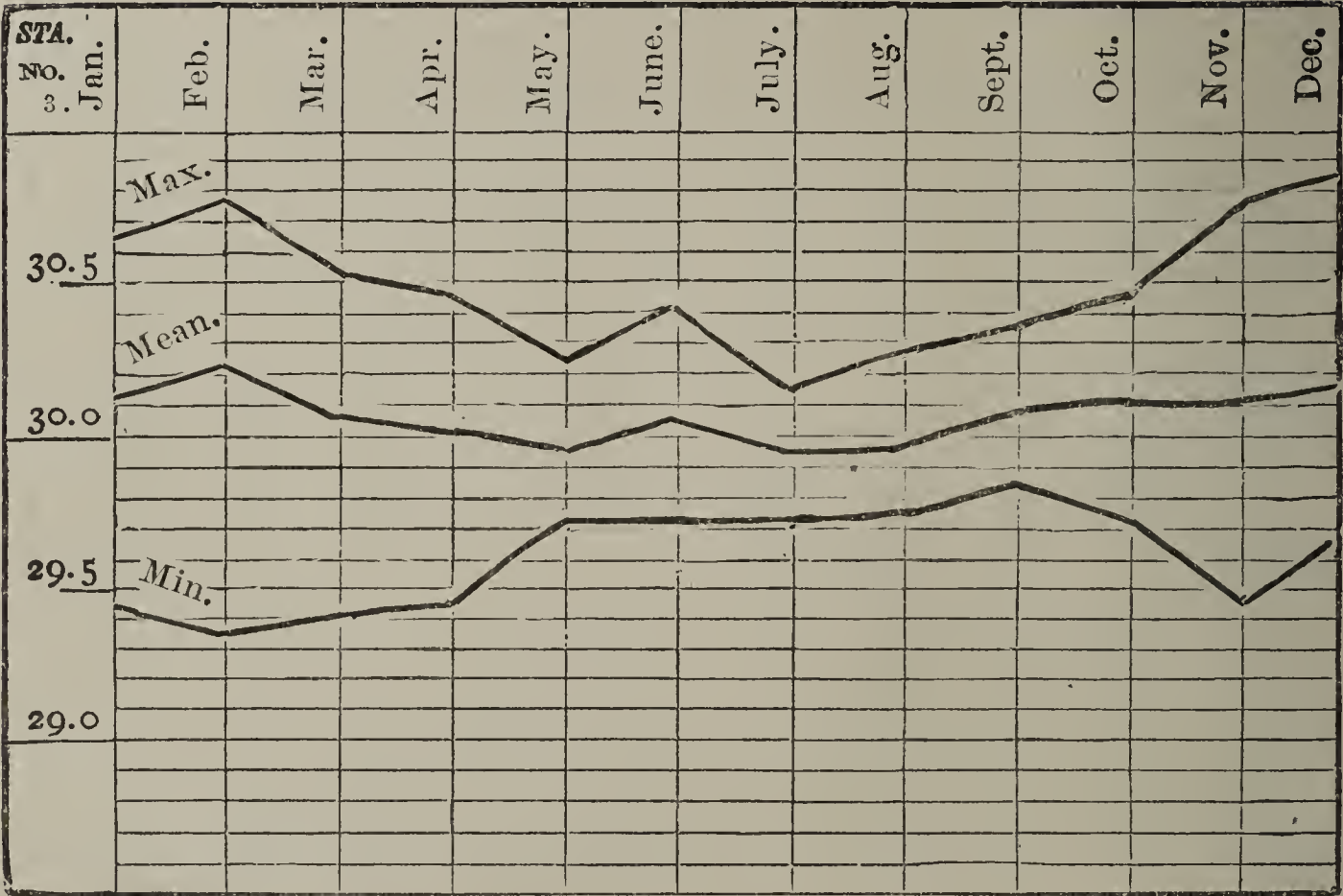
STATION No. 2.—COLLEGE HILL.

Chart showing the monthly maximum, mean and minimum barometer at College Hill, for the year ending December 31, 1887.



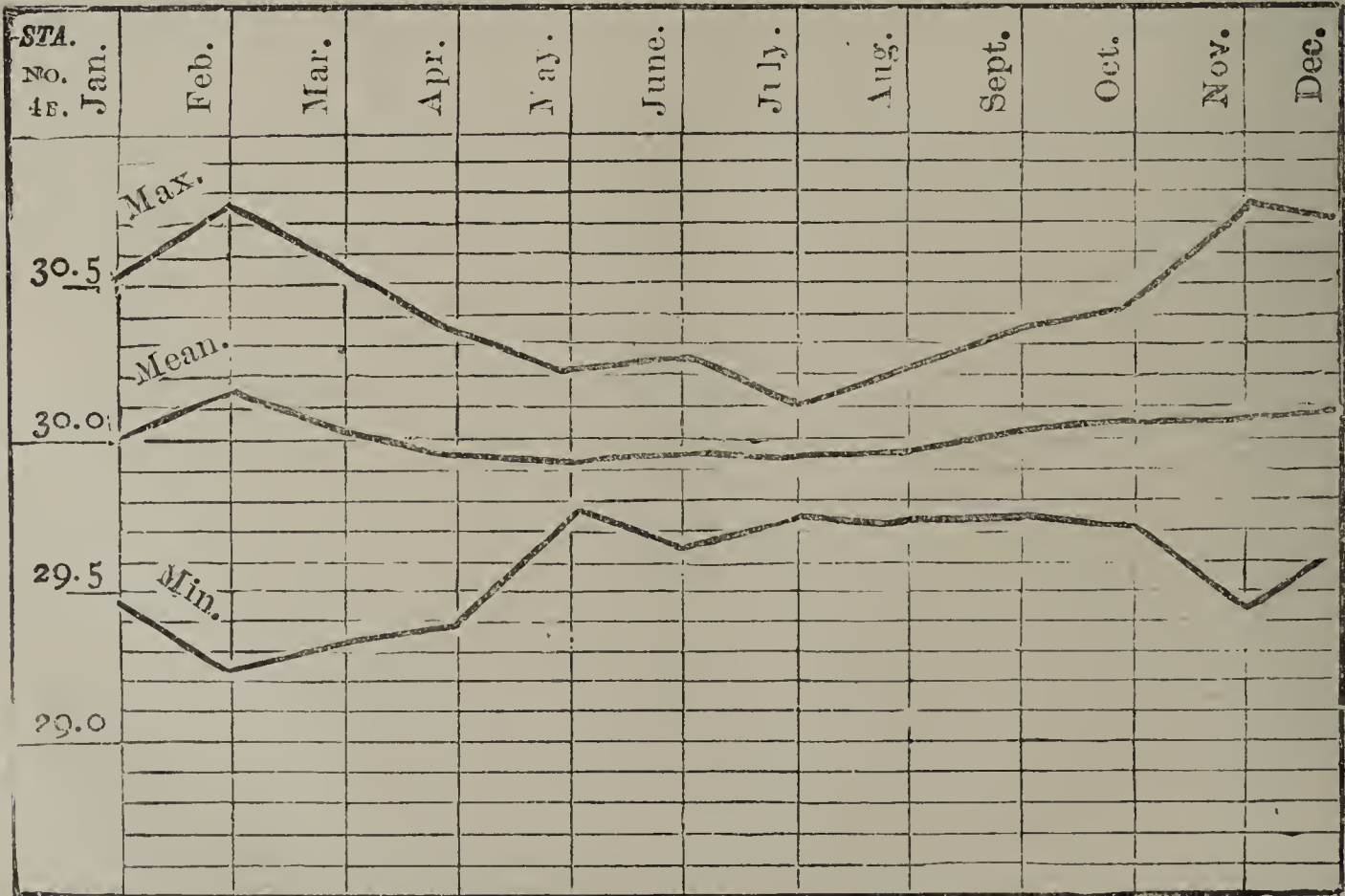
STATION No. 3.—DAYTON.

Chart showing the monthly maximum, mean and minimum barometer at Dayton, for the year ending December 31, 1887.



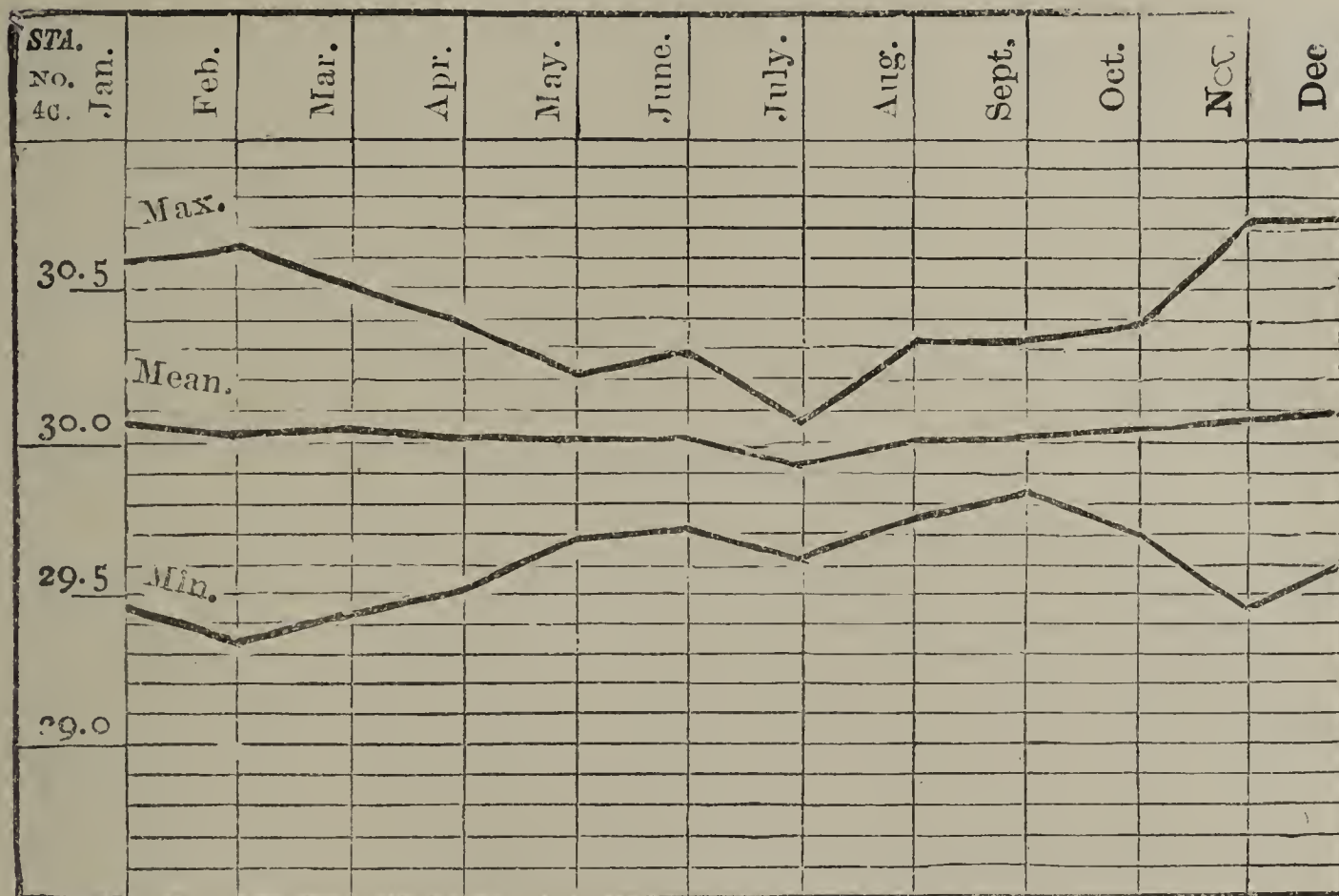
STATION No. 4B.—SIDNEY.

Chart showing the monthly maximum, mean and minimum barometer at Sidney, for the year ending December 31, 1887.



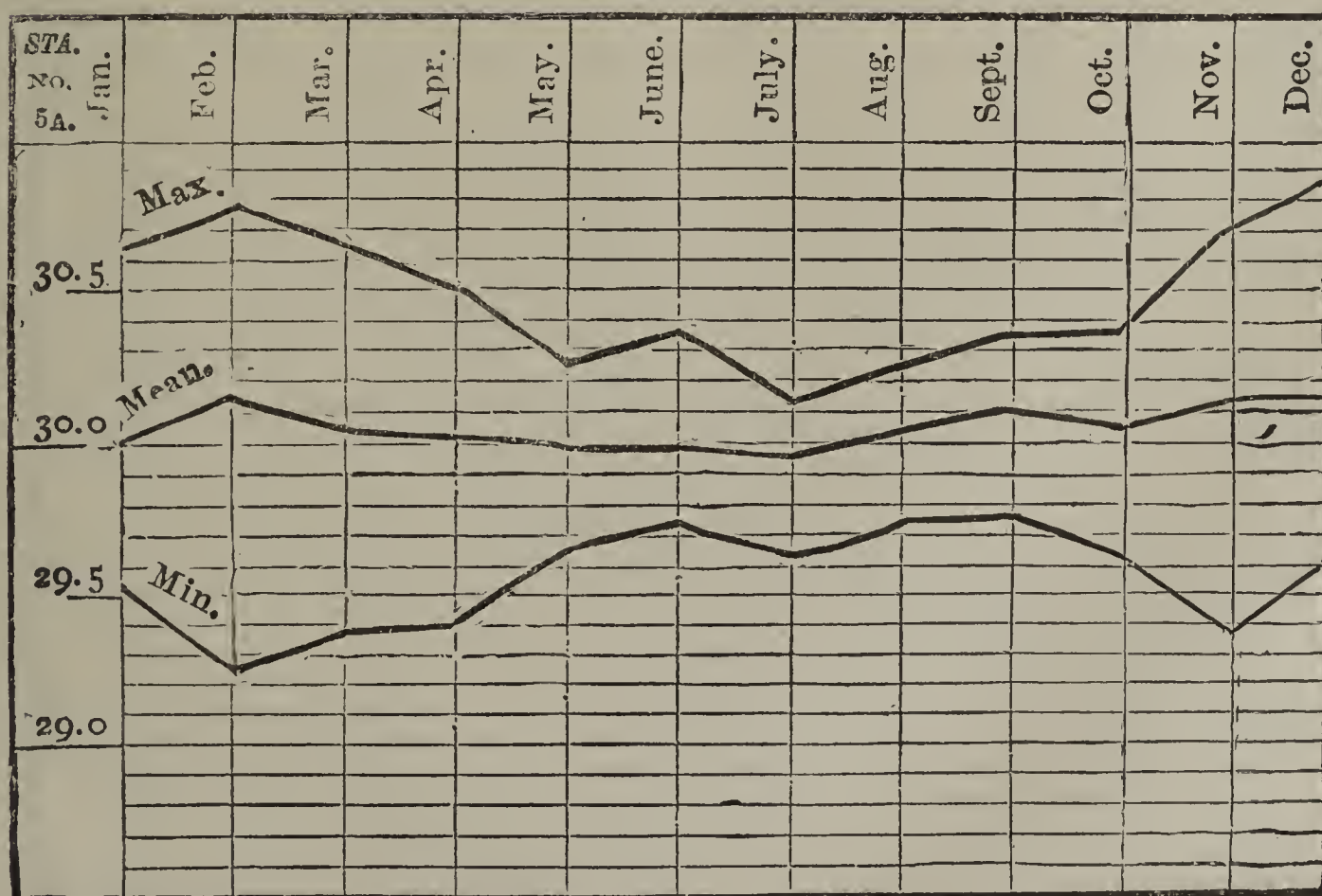
STATION No. 4C.—GREENVILLE.

Chart showing the monthly maximum, mean and minimum barometer at
Greenville, for the year ending December 31, 1887.



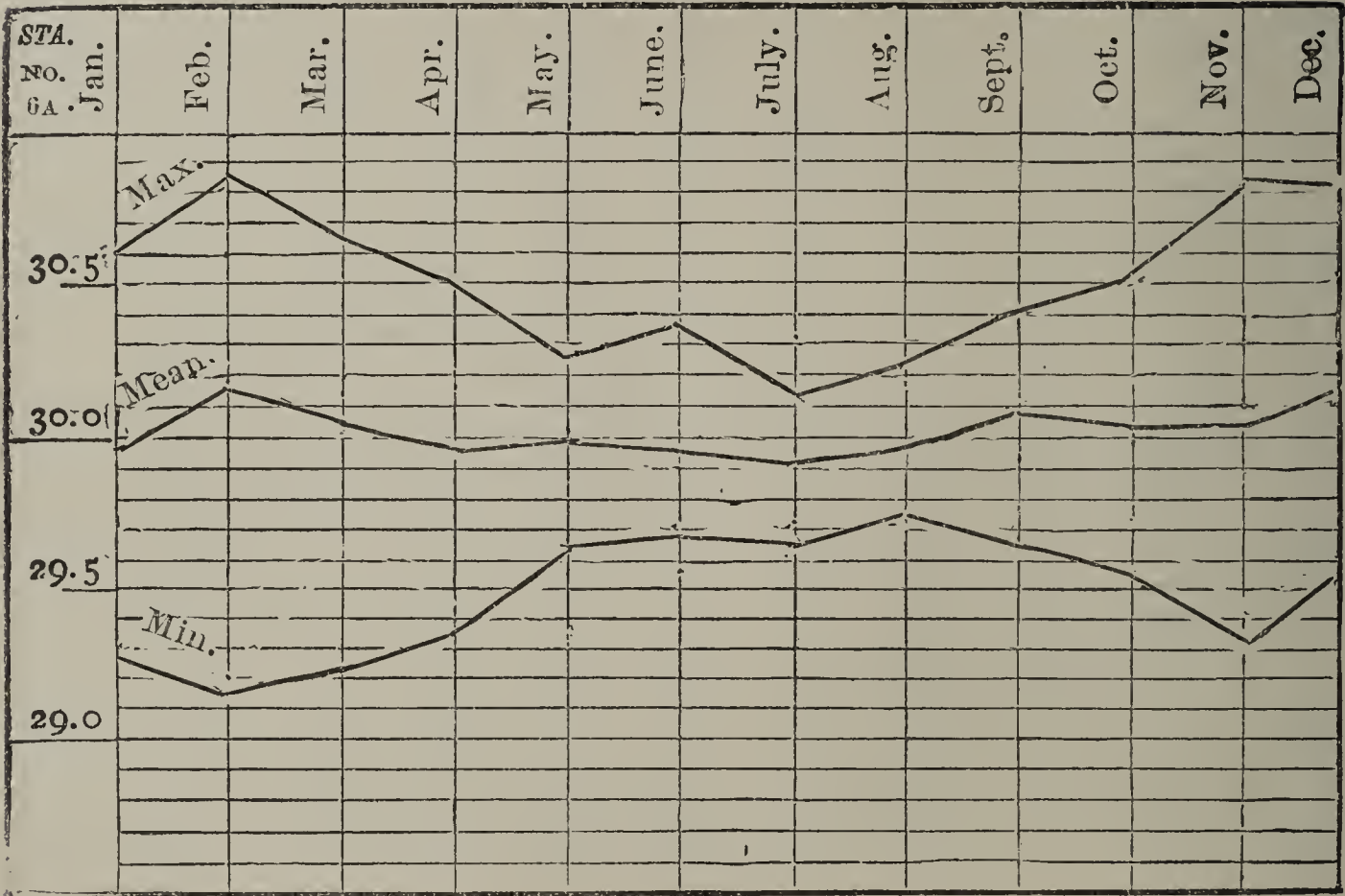
STATION No. 5A.—UPPER SANDUSKY.

Chart showing the monthly maximum, mean and minimum barometer at
Upper Sandusky, for the year ending December 31, 1887.



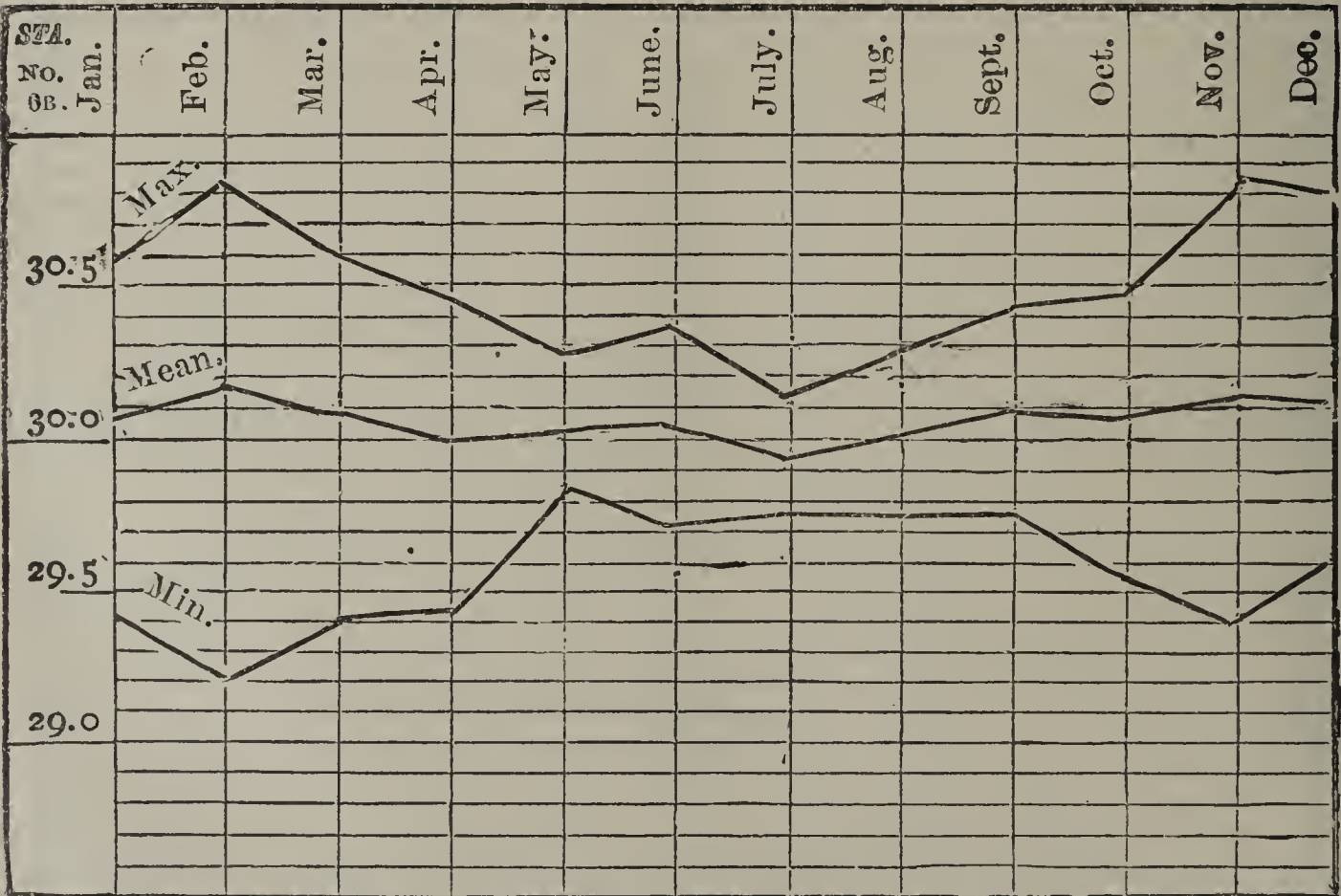
STATION No. 6A.—WAUSEON.

Chart showing the monthly maximum, mean and minimum barometer at Wauseon, for the year ending December 31, 1887.



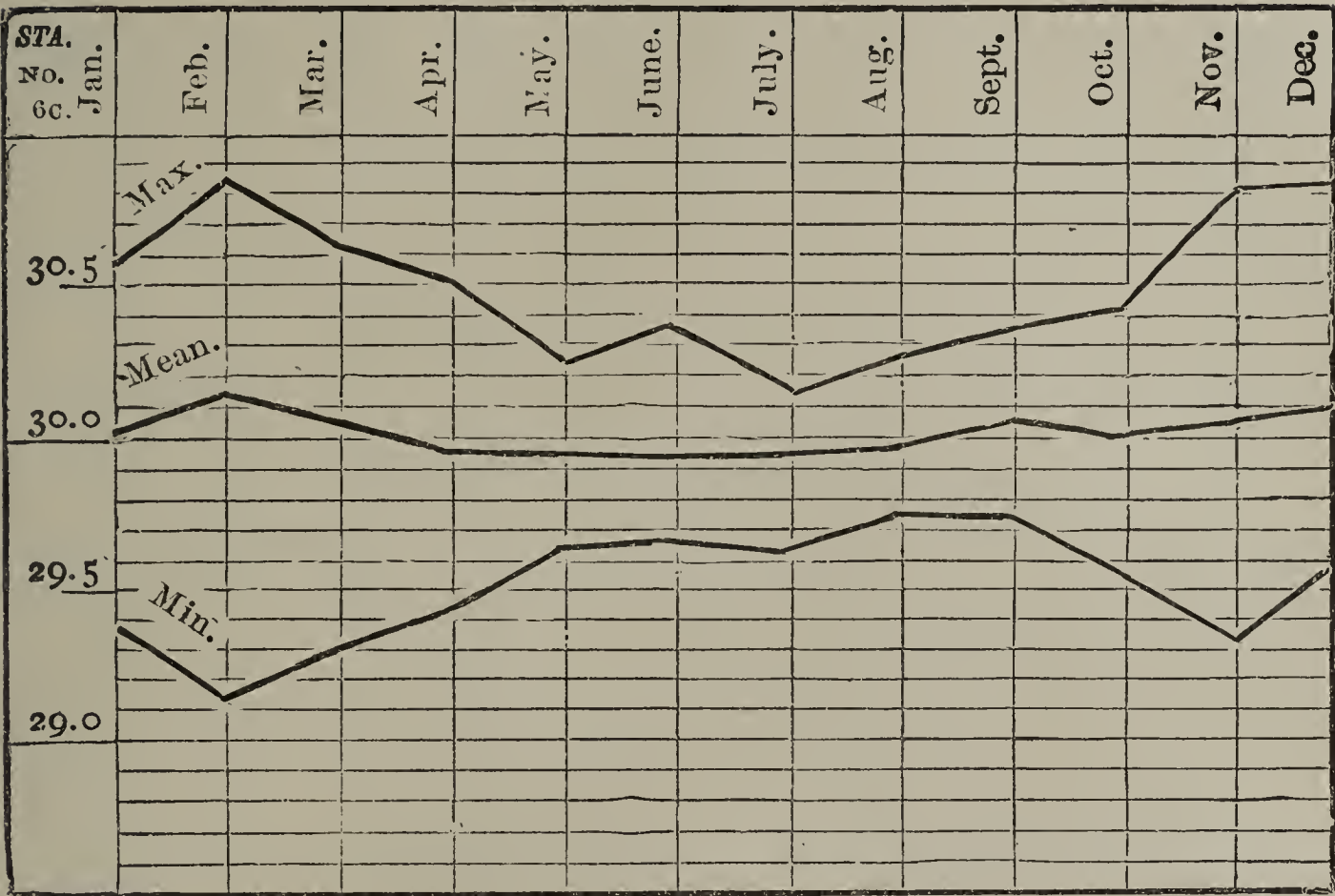
STATION No. 6B.—PAULDING.

Chart showing the monthly maximum, mean and minimum barometer at Paulding, for the year ending December 31, 1887.



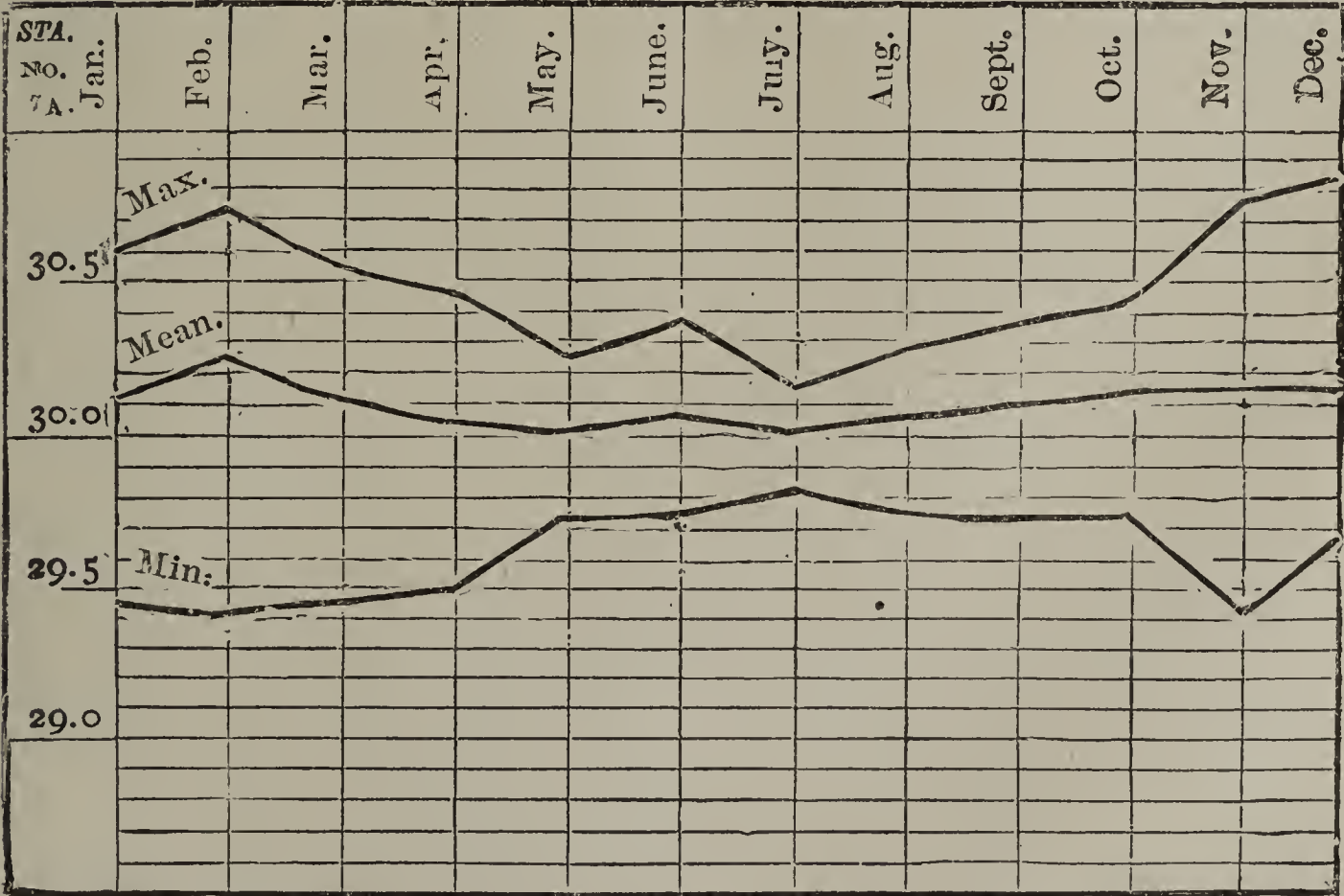
STATION No. 6C.—NAPOLEON.

Chart showing the monthly maximum, mean and minimum barometer at Napoleon, for the year ending December 31, 1887.



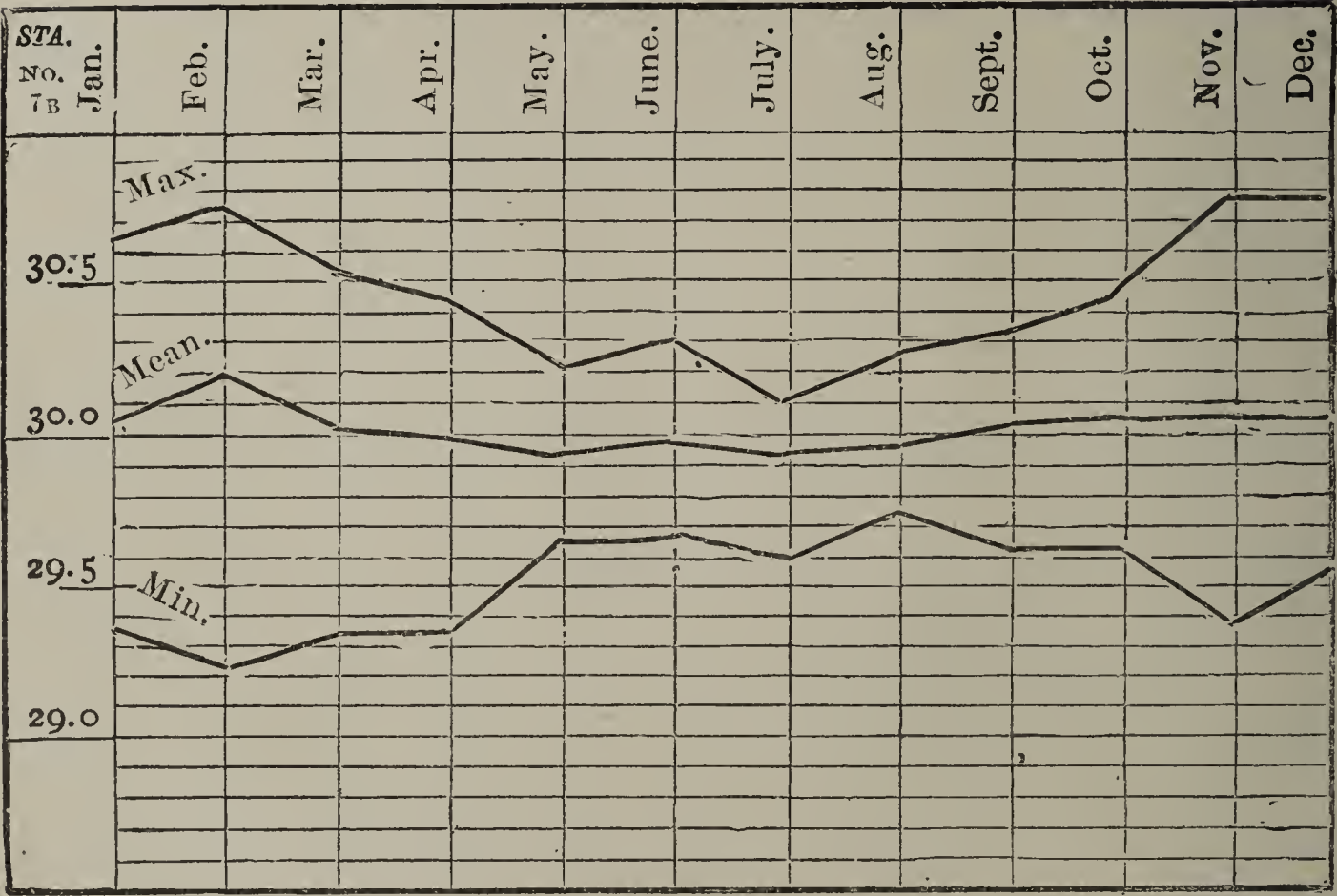
STATION No. 7A.—CLARKSVILLE.

Chart showing the monthly maximum, mean and minimum barometer at Clarksville, for the year ending December 31, 1887.



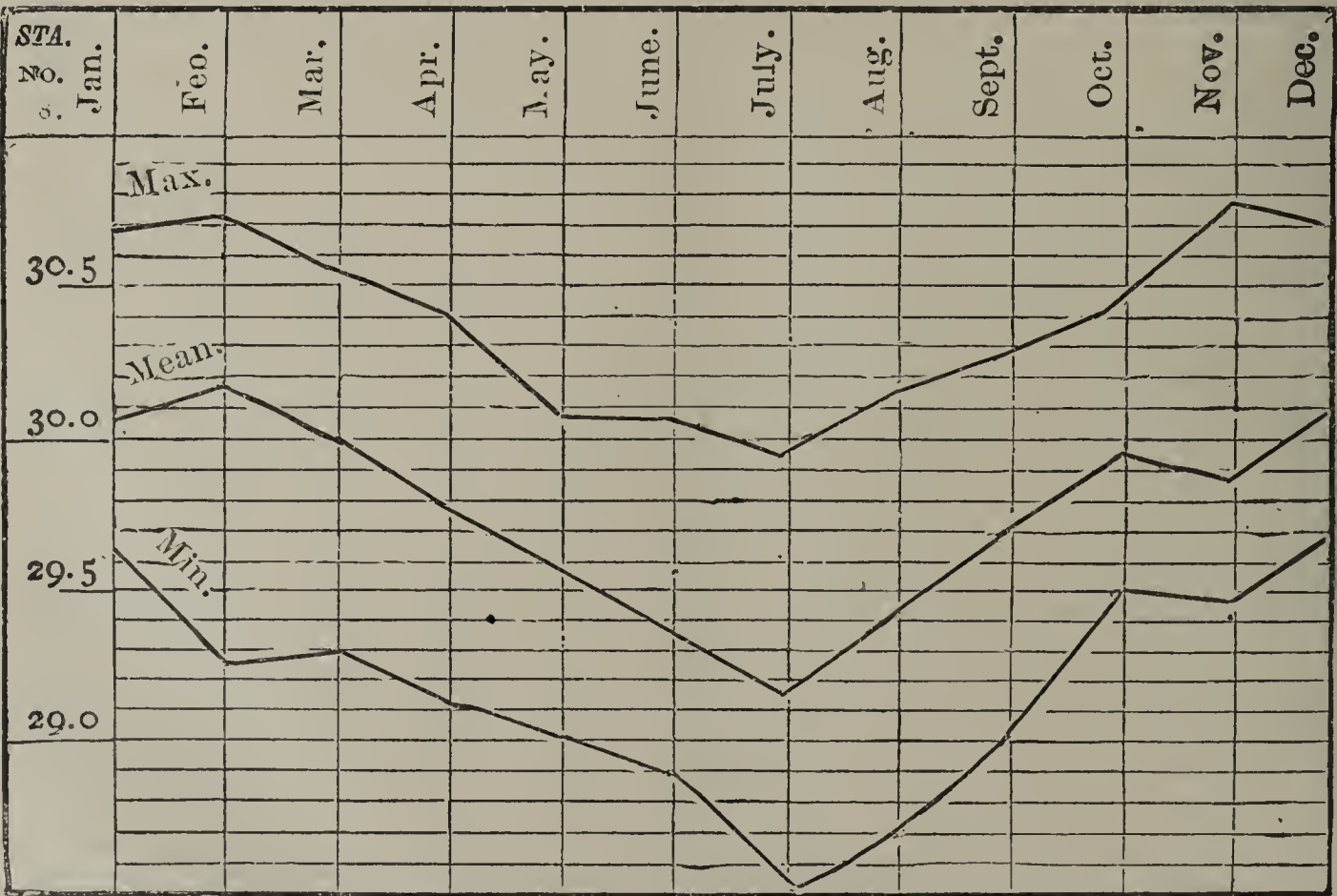
STATION No. 7B.—YELLOW SPRINGS.

Chart showing the monthly maximum, mean and minimum barometer at Yellow Springs, for the year ending December 31, 1887.



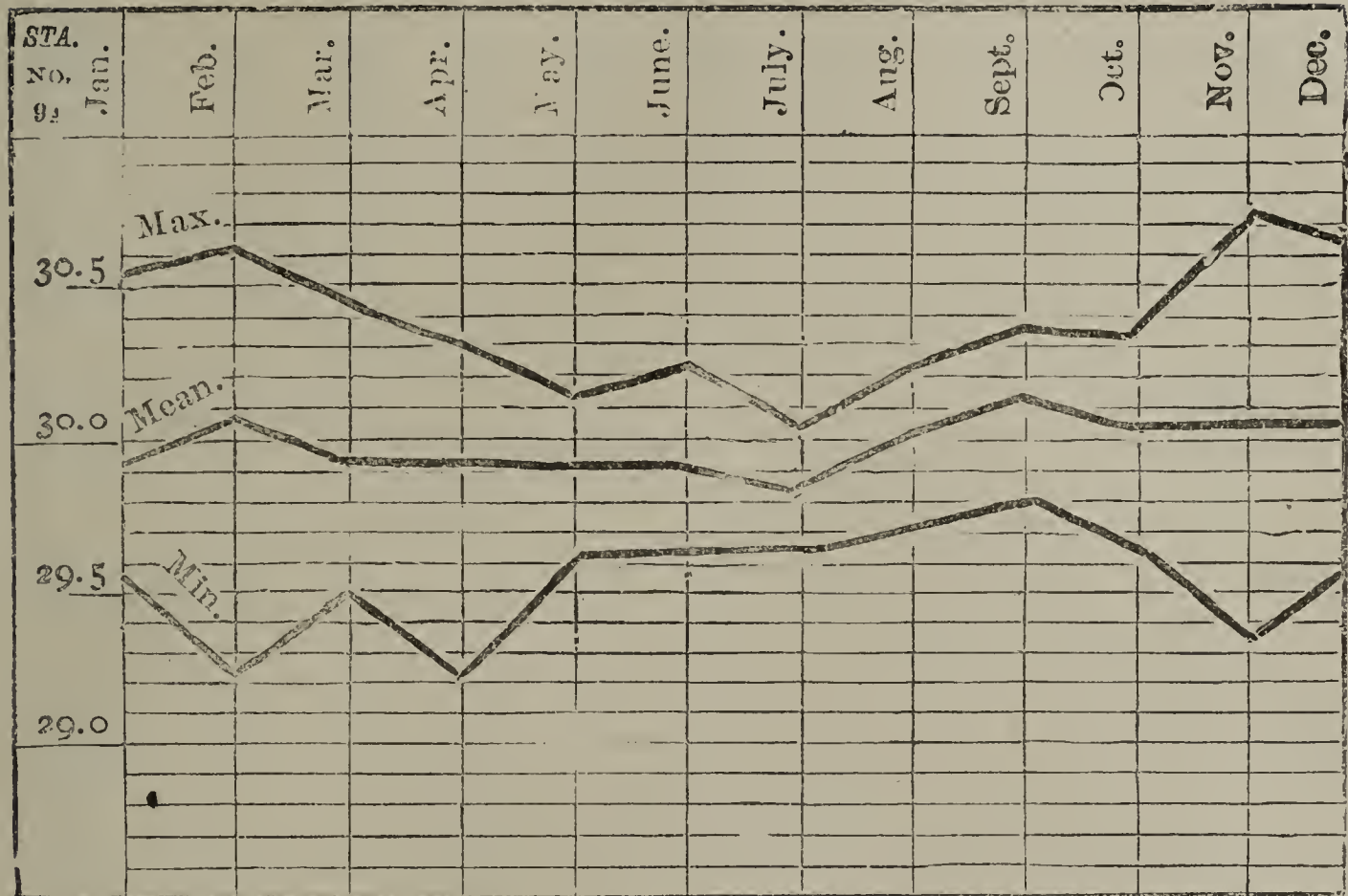
STATION No. 8.—NORTH LEWISBURG.

Chart showing the monthly maximum, mean and minimum barometer at North Lewisburg, for the year ending December 31, 1887.



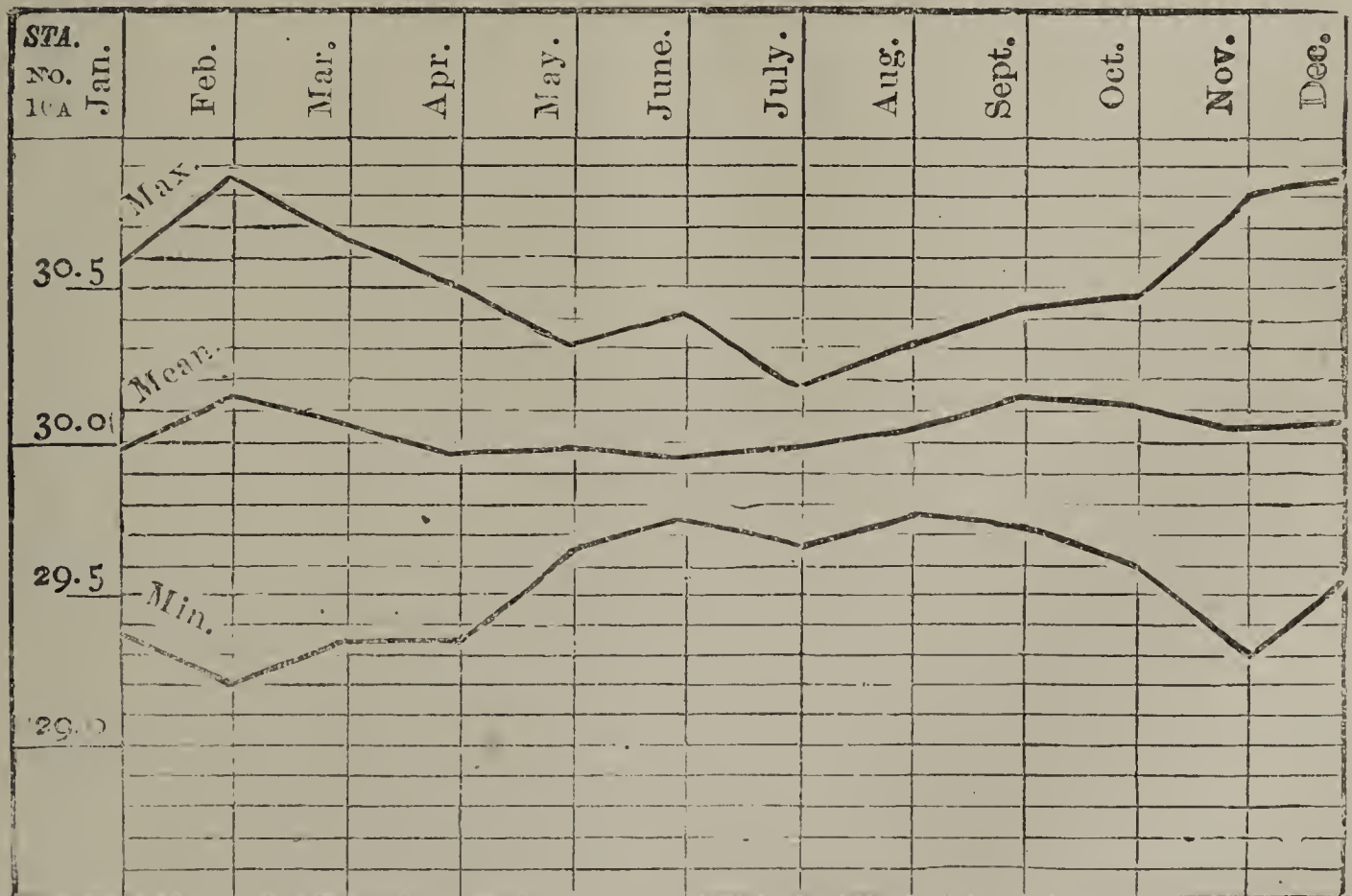
STATION No. 9A.—BANGORVILLE.

Chart showing the monthly maximum, mean and minimum barometer at Bangorville, for the year ending December 31, 1887.



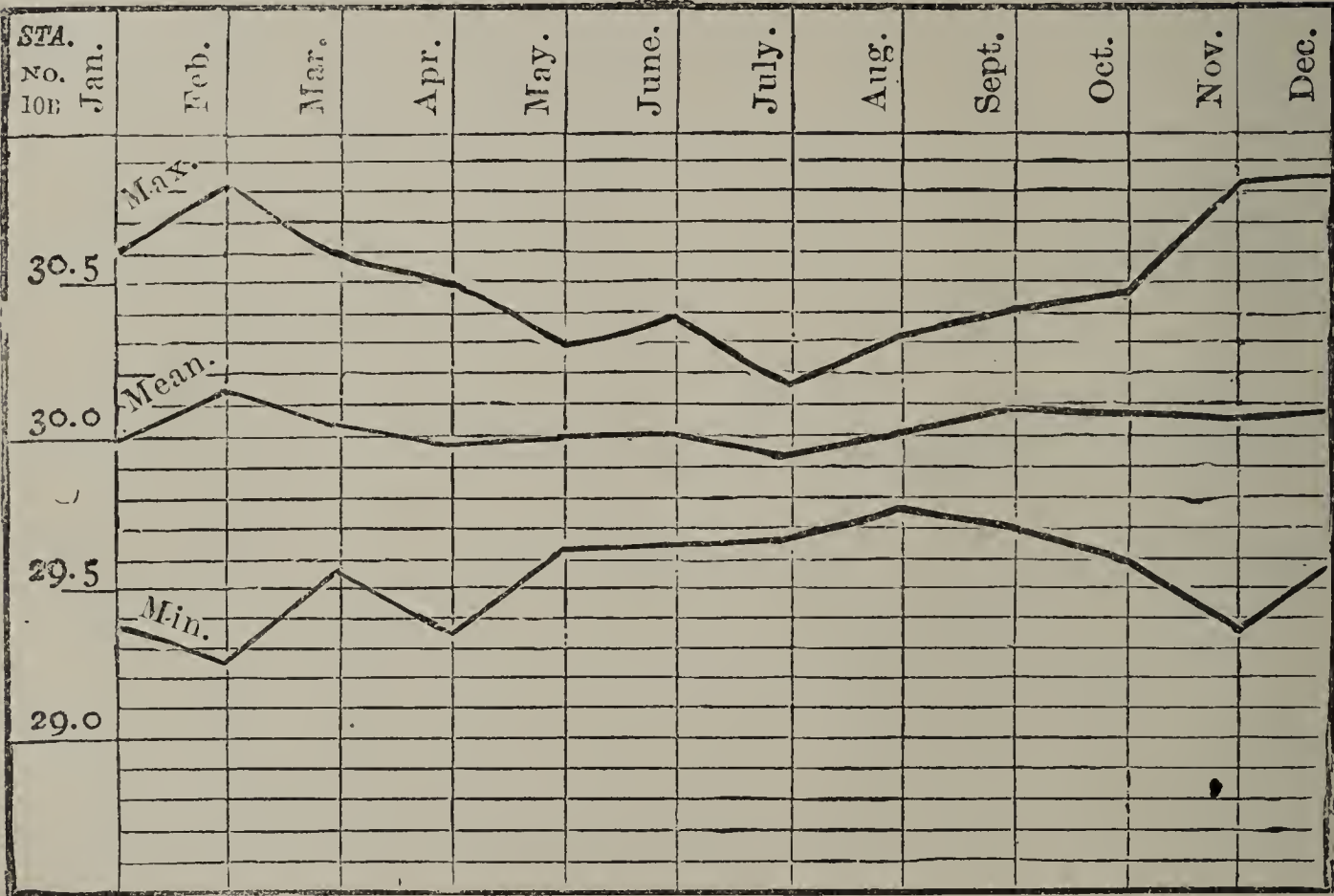
STATION No. 10A.—TOLEDO.

Chart showing the monthly maximum, mean and minimum barometer at Toledo, for the year ending December 31, 1887.



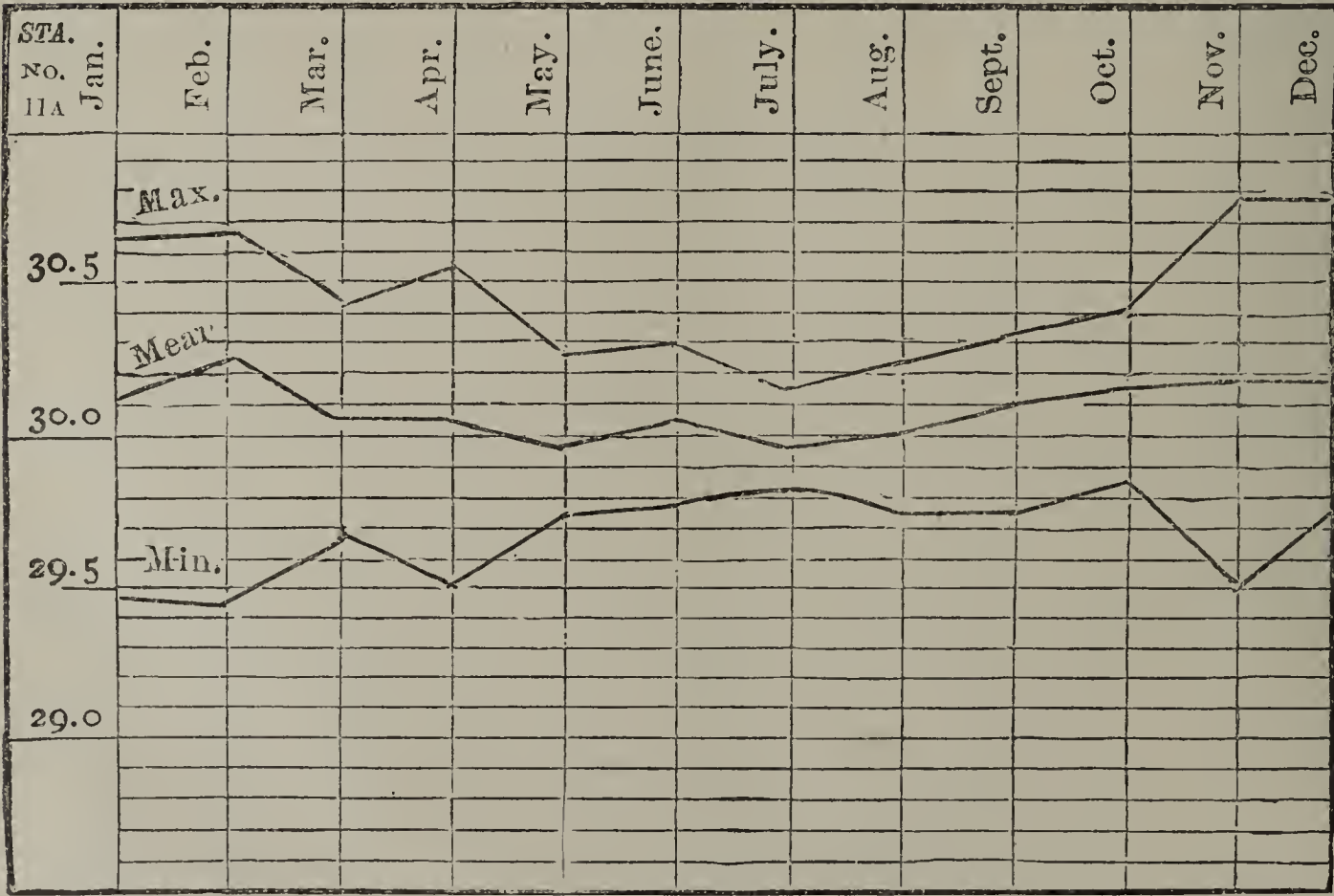
STATION No. 10B.—SANDUSKY.

Chart showing the monthly maximum, mean and minimum barometer at Sandusky, for the year ending December 31, 1887.



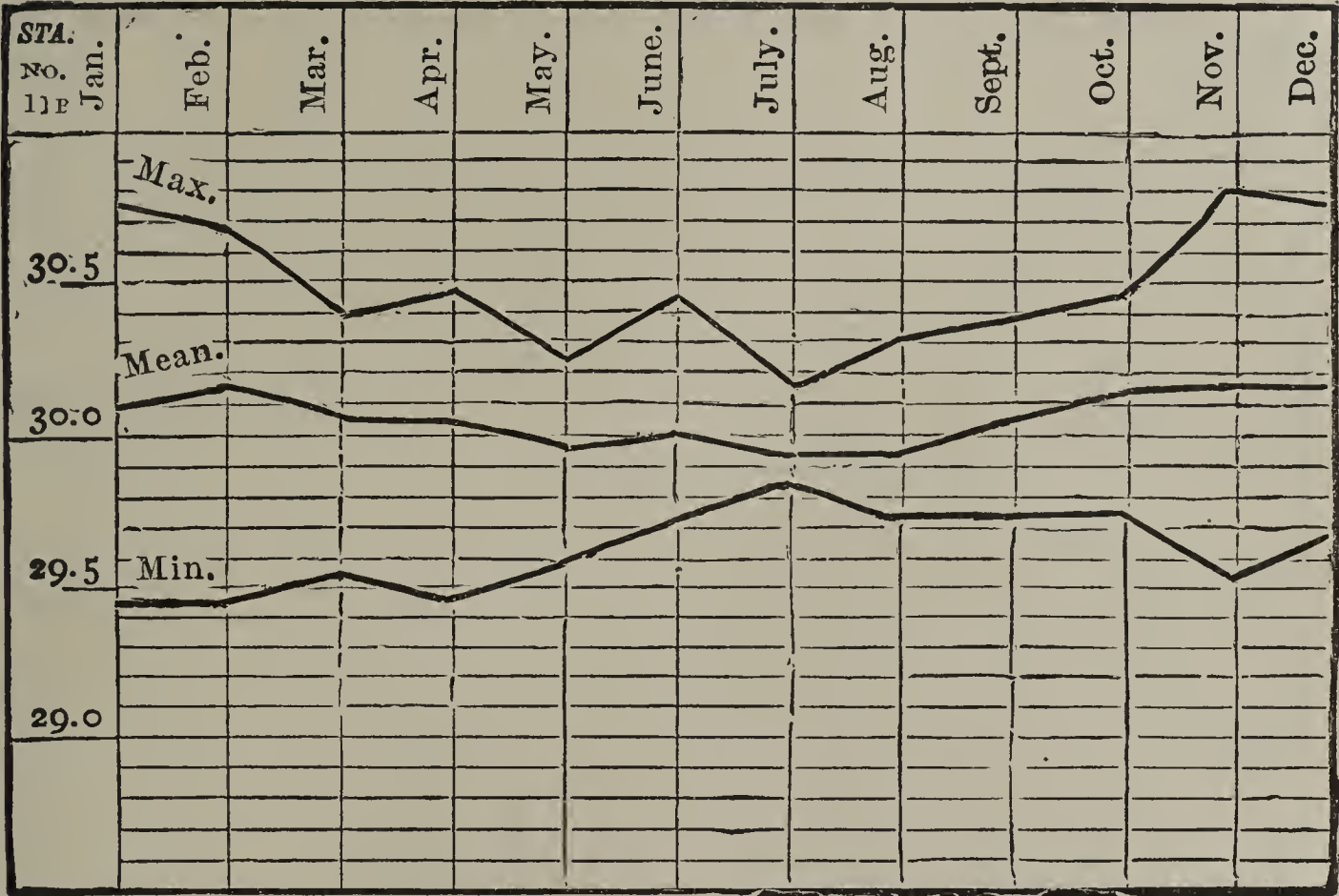
STATION No. 11A.—HANGING ROCK.

Chart showing the monthly maximum, mean and minimum barometer at Hanging Rock, for the month ending December 31, 1887.



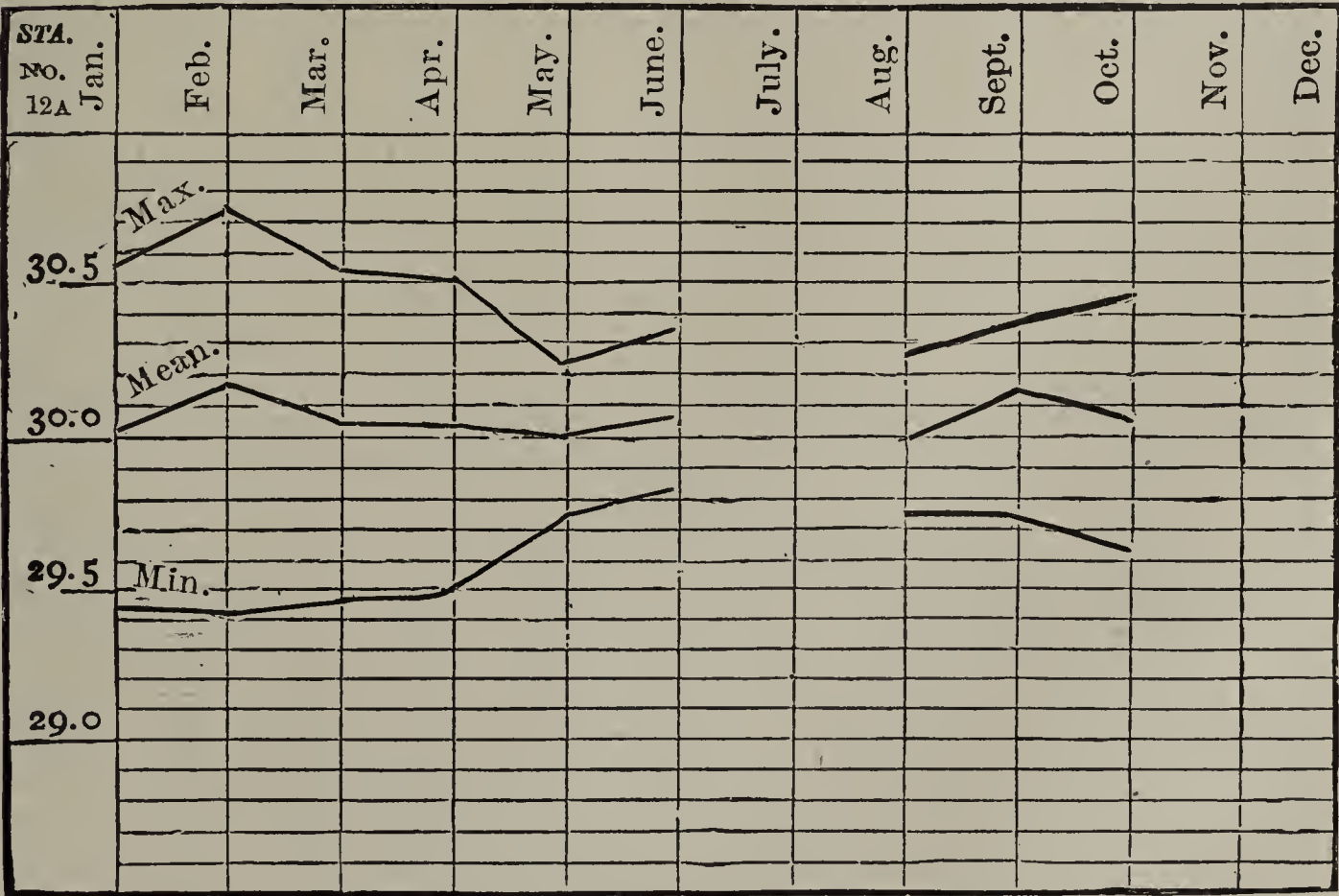
STATION No. 11B.—PORTSMOUTH.

Chart showing the monthly maximum, mean and minimum barometer at
Portsmouth, for the year ending December 31, 1887.



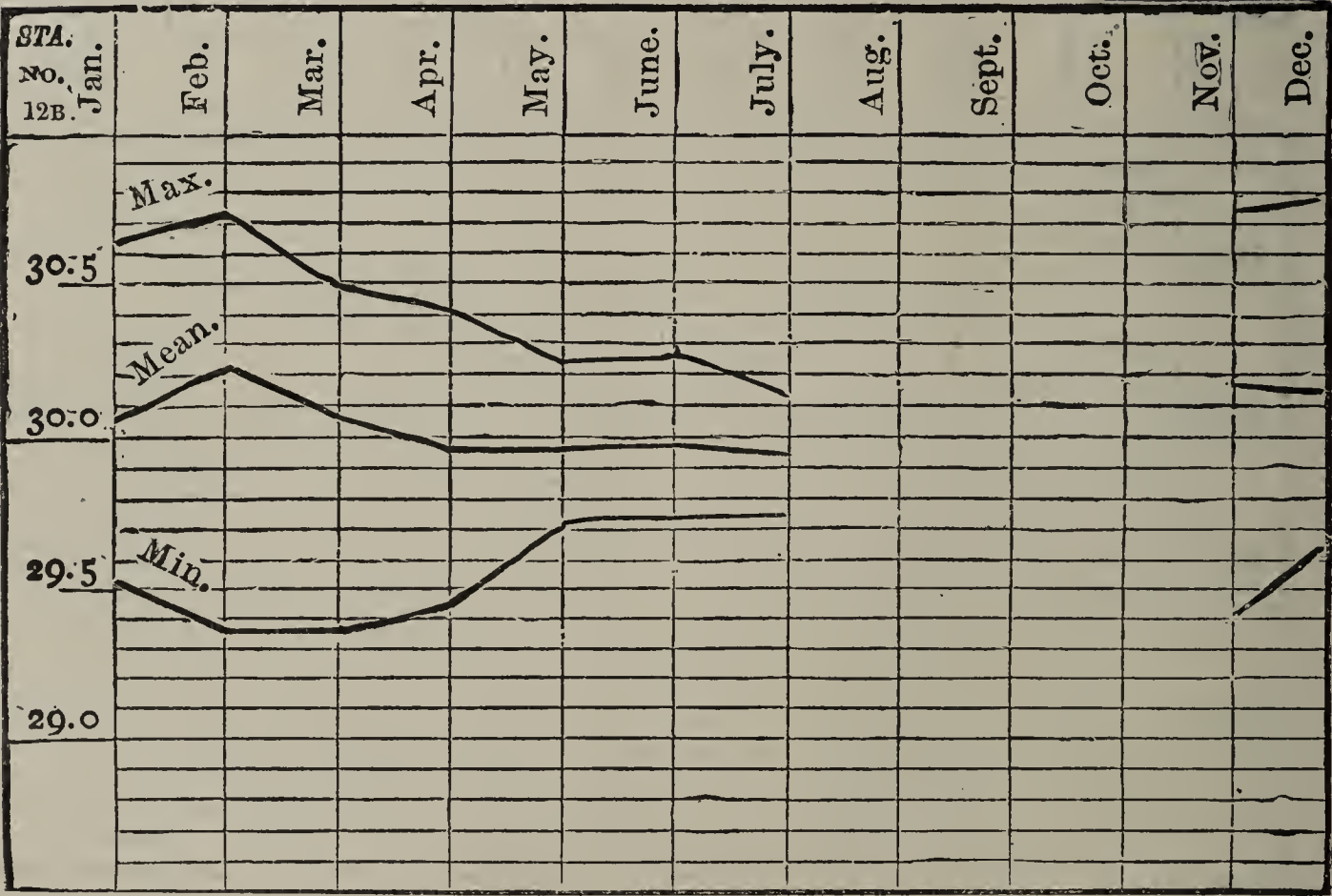
STATION No. 12A.—WASHINGTON C. H.

Chart showing the monthly maximum, mean and minimum barometer at
Washington C. H., for the year ending December 31, 1887.



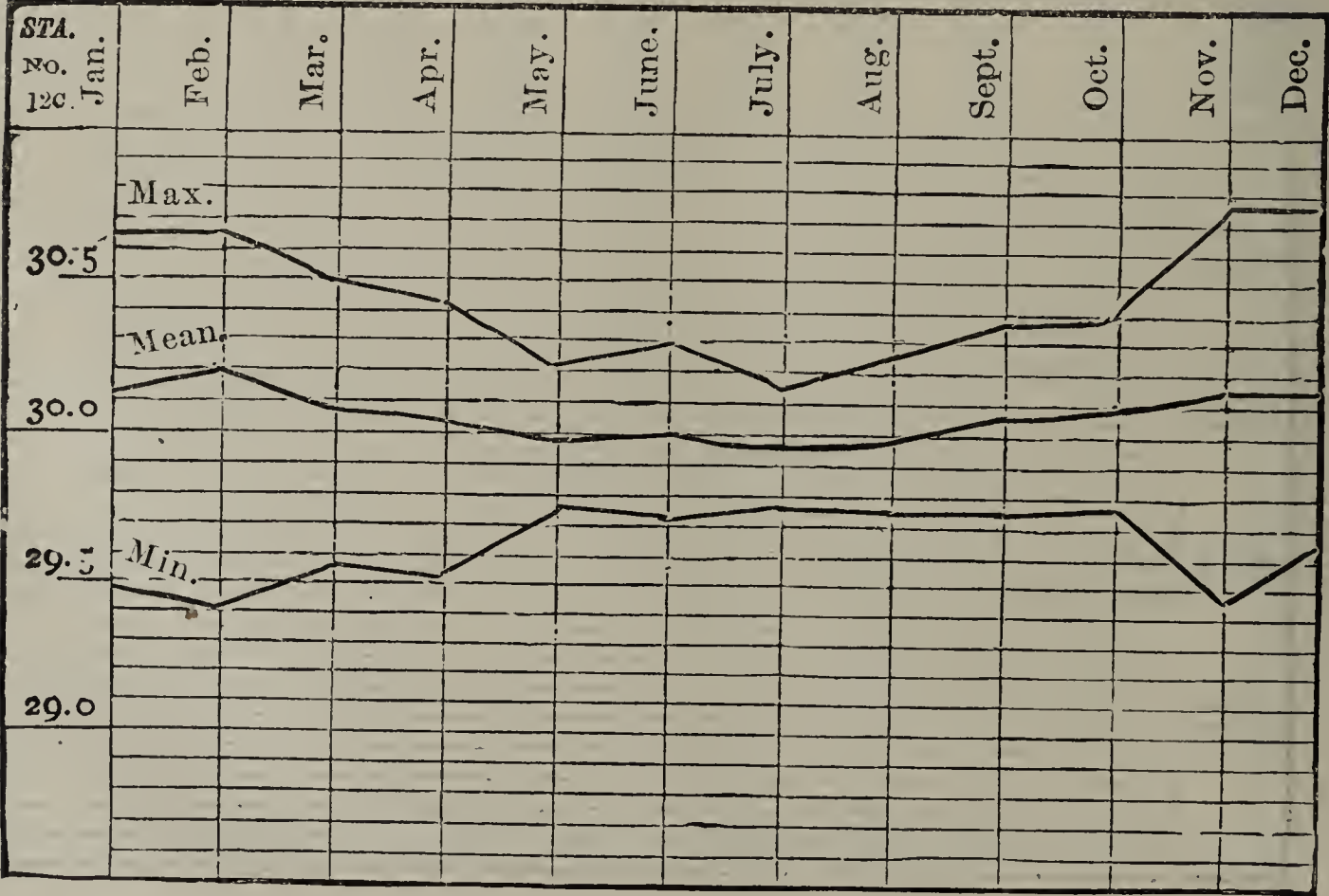
STATION No. 12B.—WAVERLY.

Chart showing the monthly maximum, mean and minimum barometer at Waverly, for the year ending December 31, 1887.



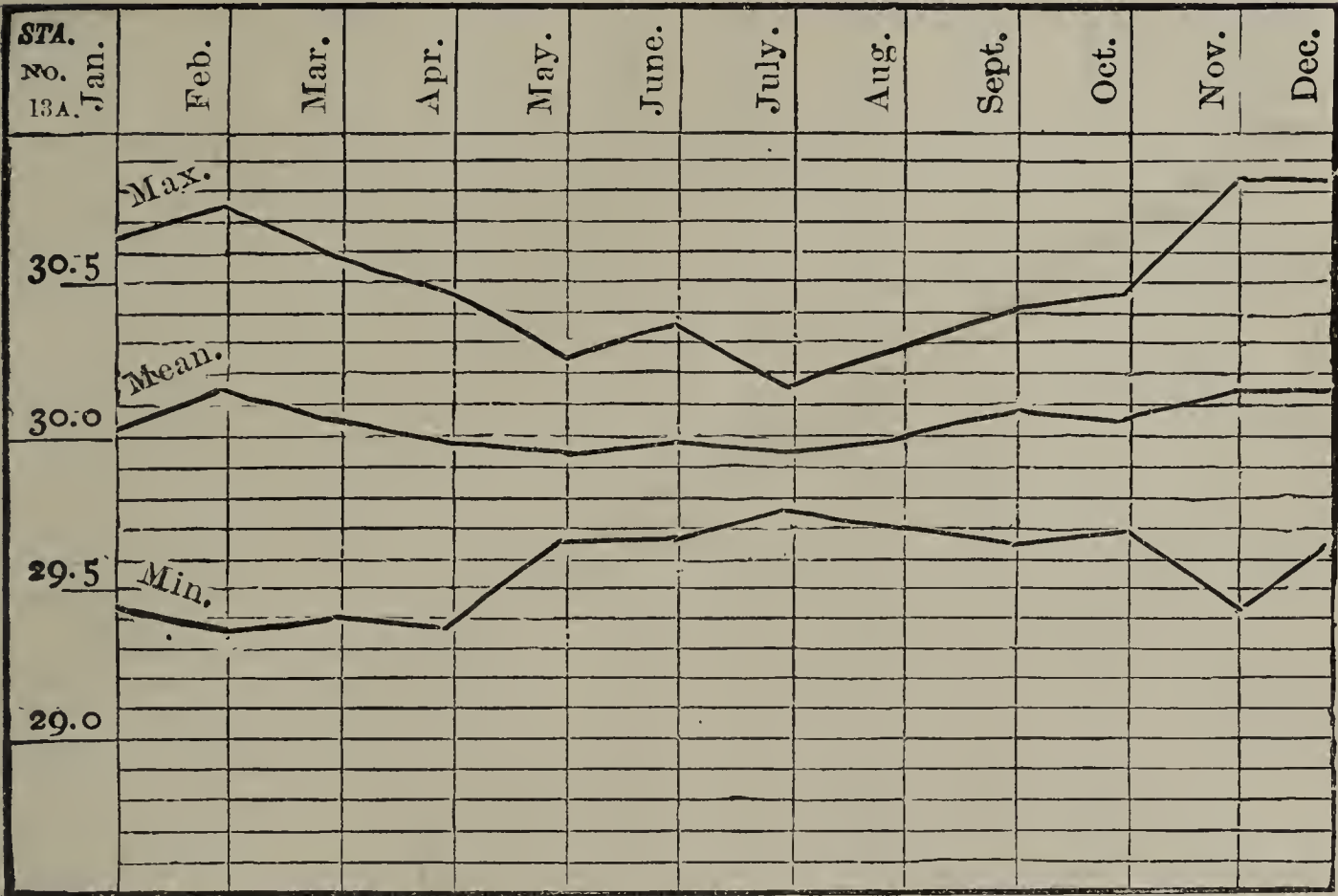
STATION No. 12C.—GEORGETOWN.

Chart showing the monthly maximum, mean and minimum barometer at Georgetown, for the year ending December 31, 1887.



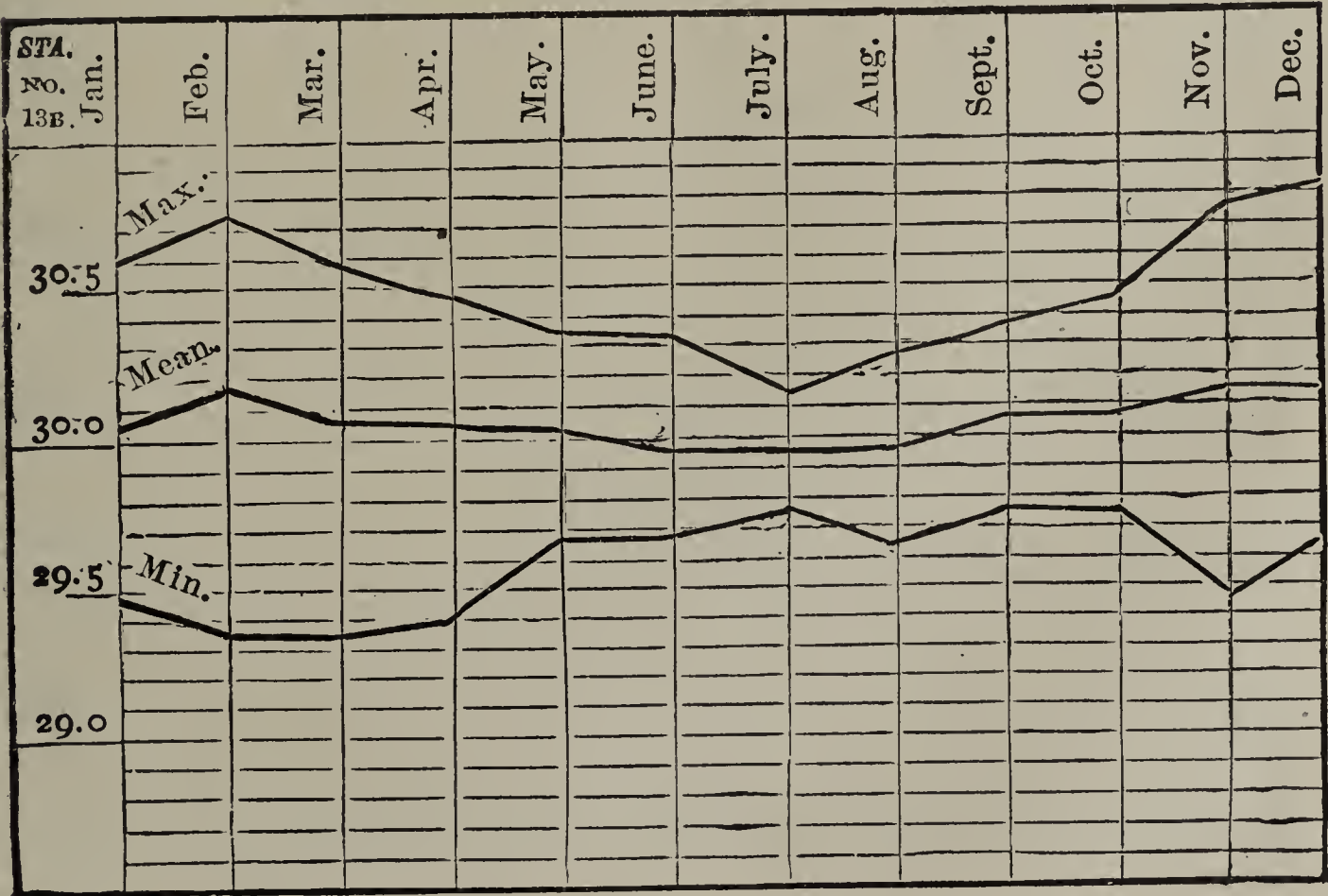
STATION No. 13A.—COLUMBUS.

Chart showing the monthly maximum, mean and minimum barometer at Columbus, for the year ending December 31, 1887.



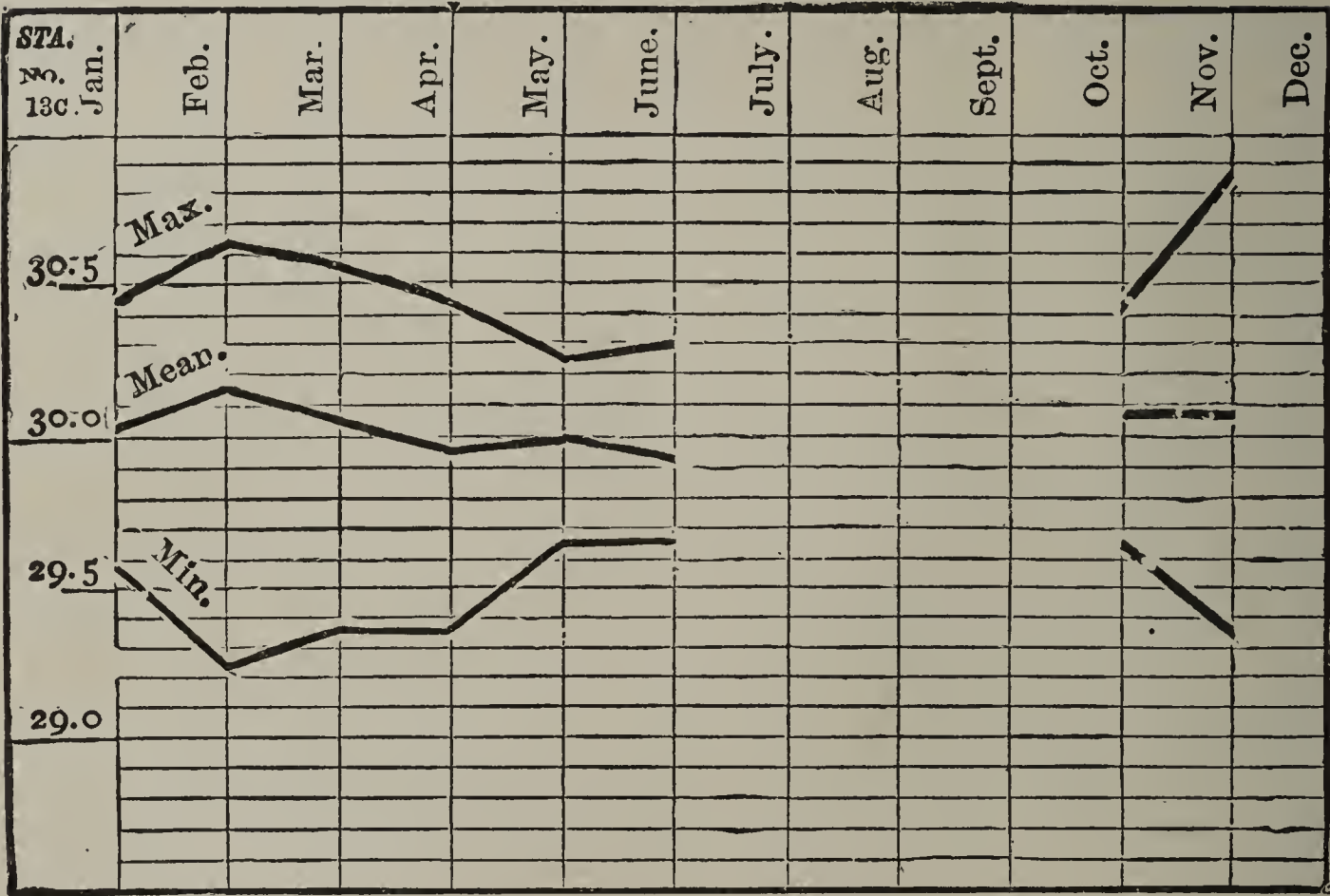
STATION No. 13B.—OHIO STATE UNIVERSITY.

Chart showing the monthly maximum, mean and minimum barometer at Ohio State University, for the year ending December 31, 1887.



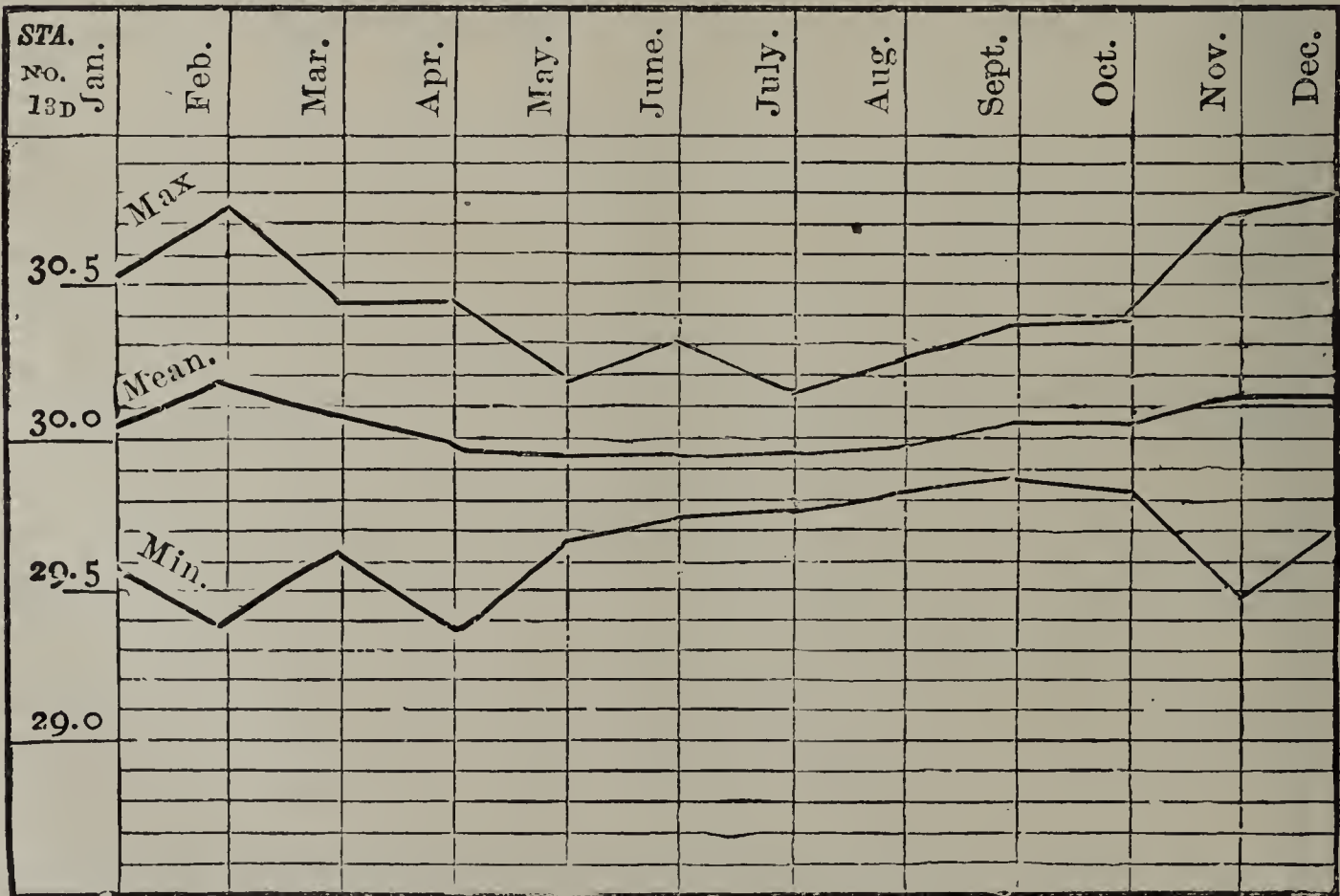
STATION No. 13C.—WESTERVILLE.

Chart showing the monthly maximum, mean and minimum barometer at Westerville for the year ending December 31, 1887.



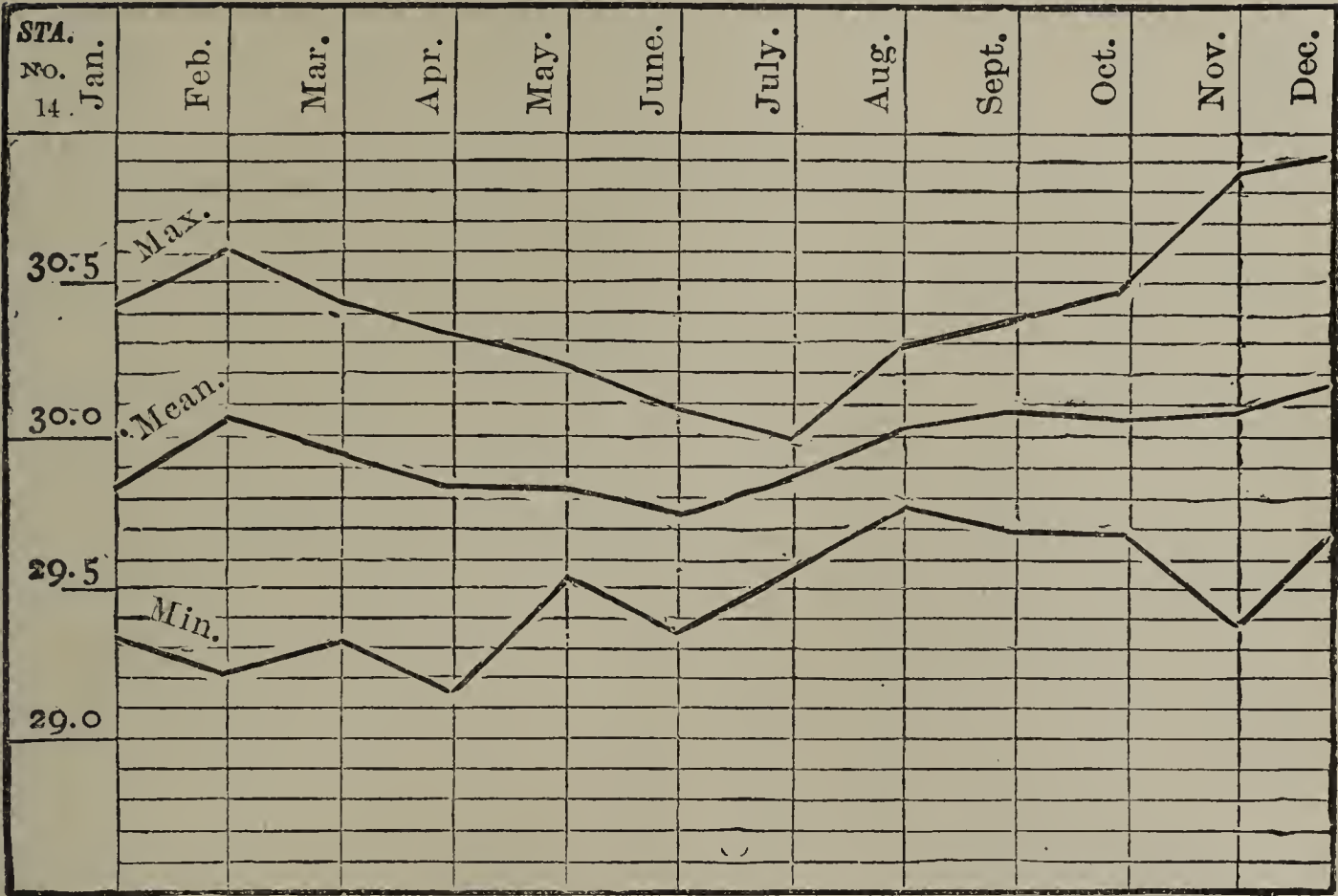
STATION No. 13D.—LOGAN.

Chart showing the monthly maximum, mean and minimum barometer at Logan, for the year ending December 31, 1887.



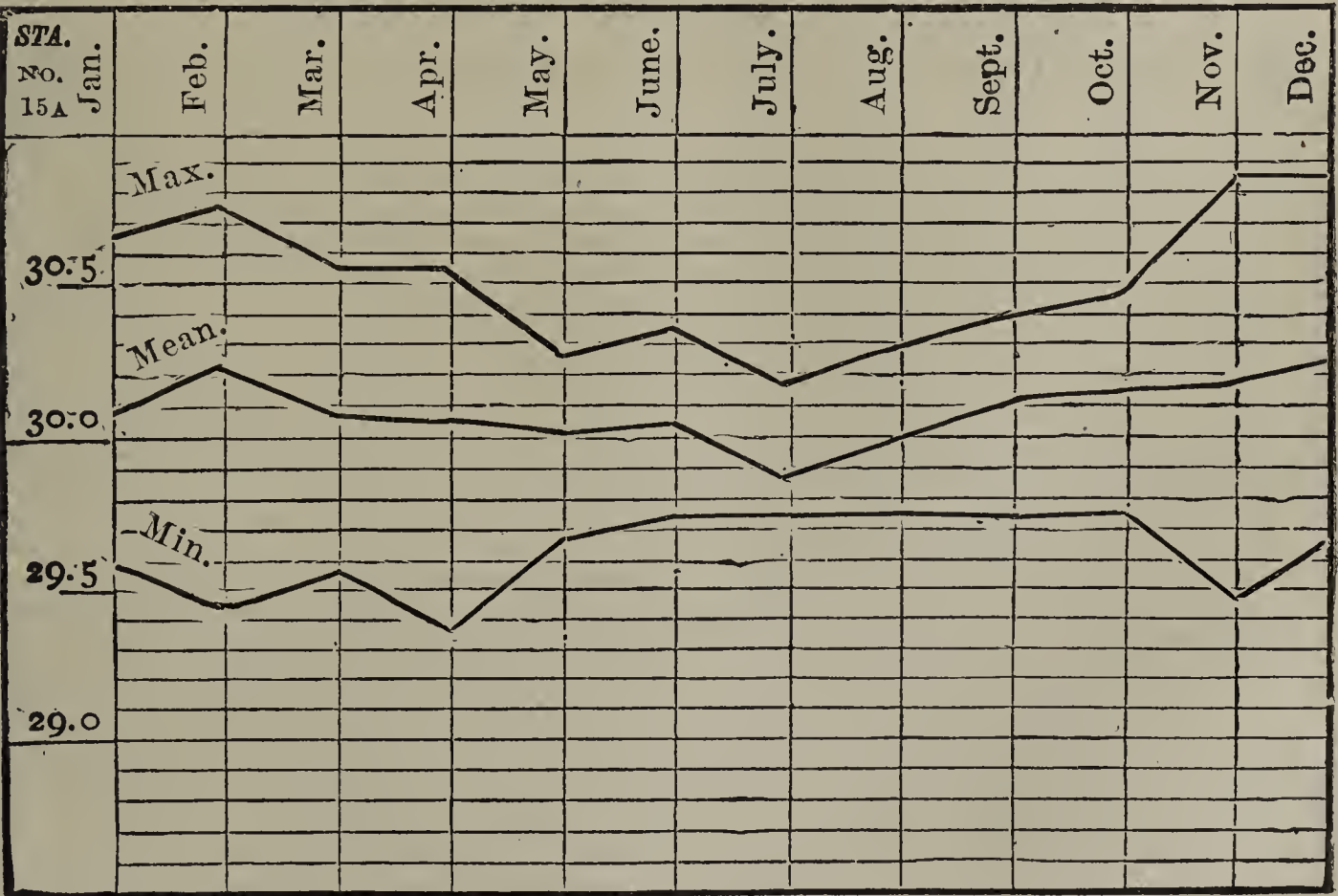
STATION No. 14.—OBERLIN.

Chart showing the monthly maximum, mean and minimum barometer at Oberlin, for the year ending December 31, 1887.



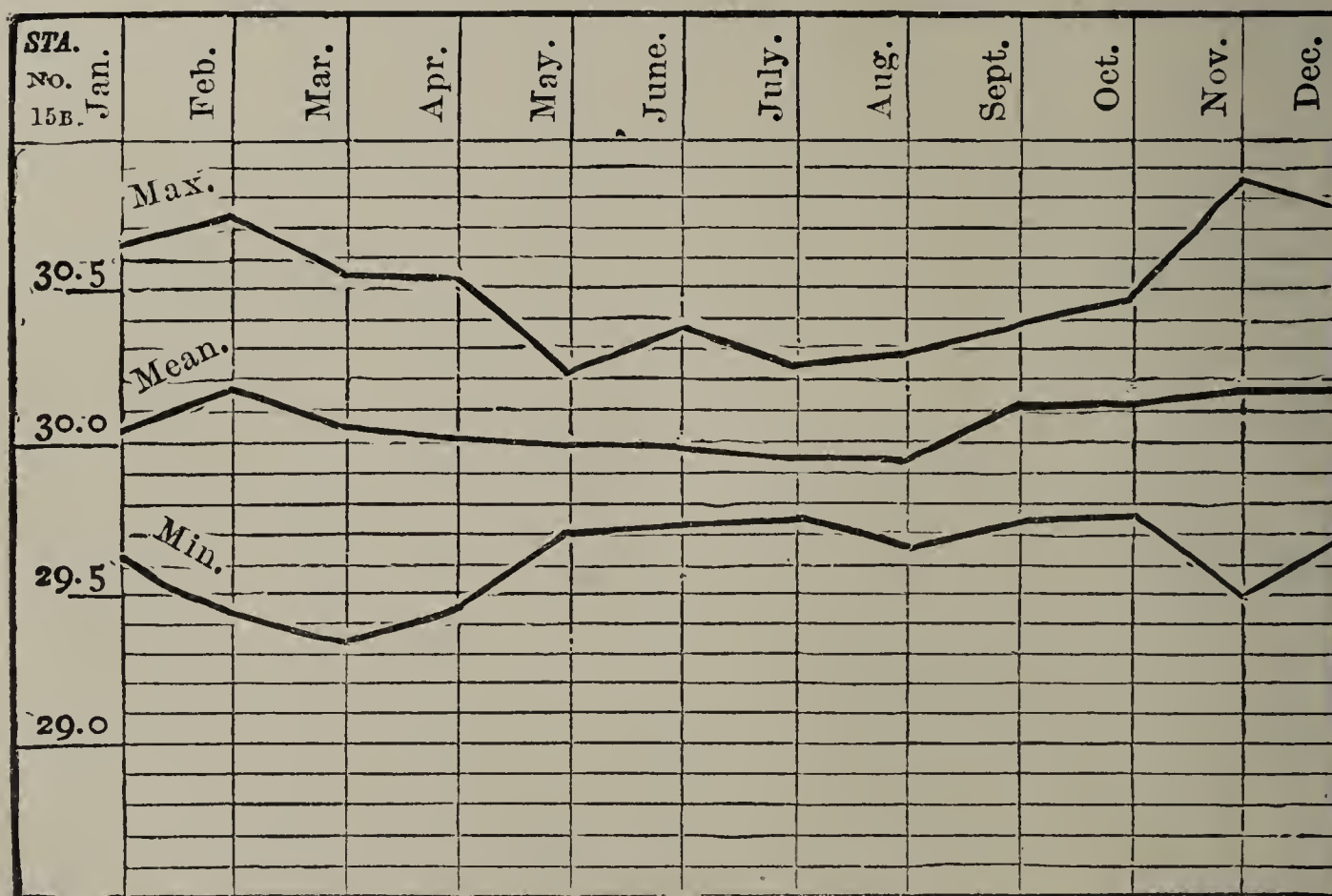
STATION No. 15A.—MARIETTA.

Chart showing the monthly maximum, mean and minimum barometer at Marietta, for the year ending December 31, 1887.



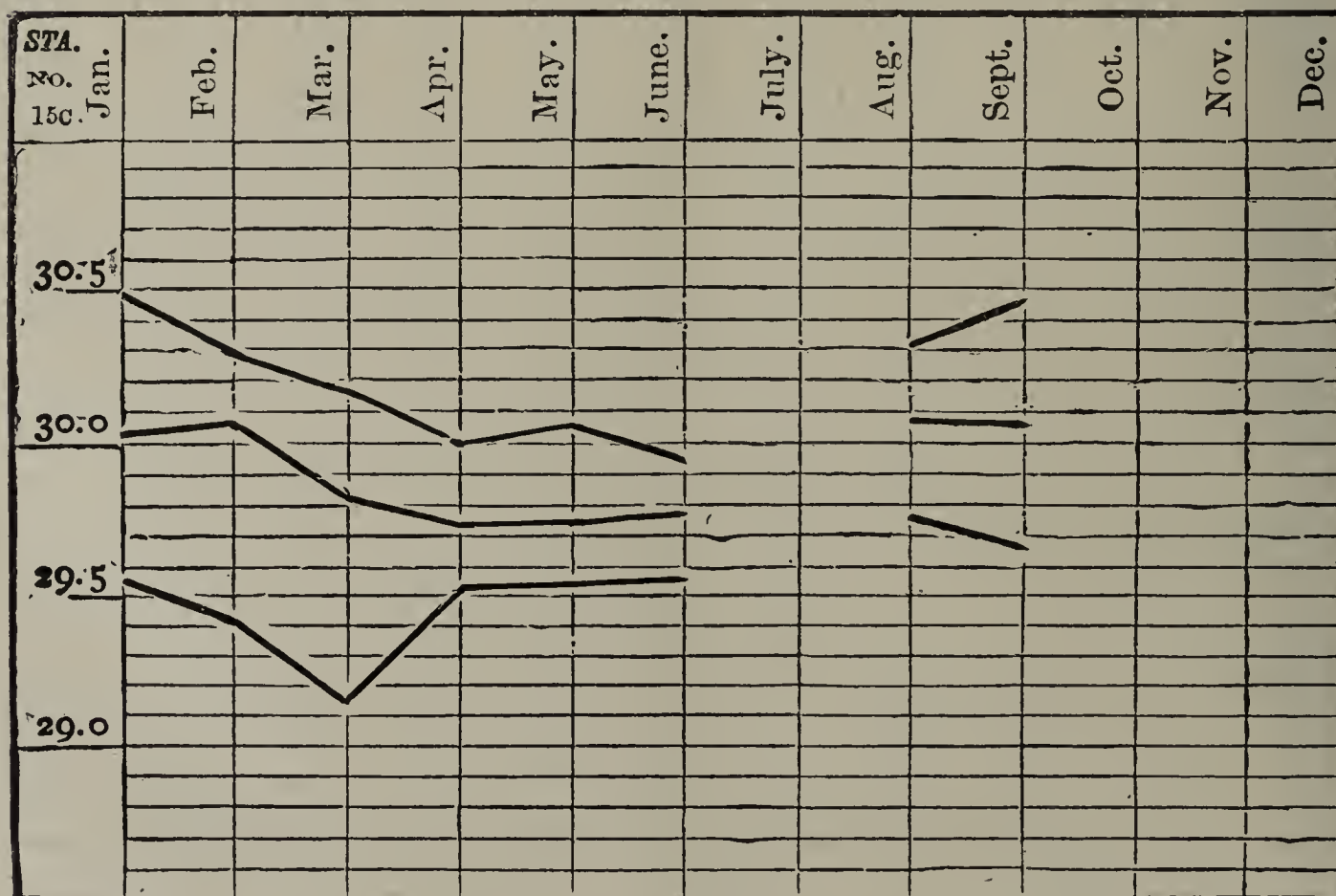
STATION No. 15B.—McCONNELSVILLE.

Chart showing the monthly maximum, mean and minimum barometer at
McConnelsville, for the year ending December 31, 1887.



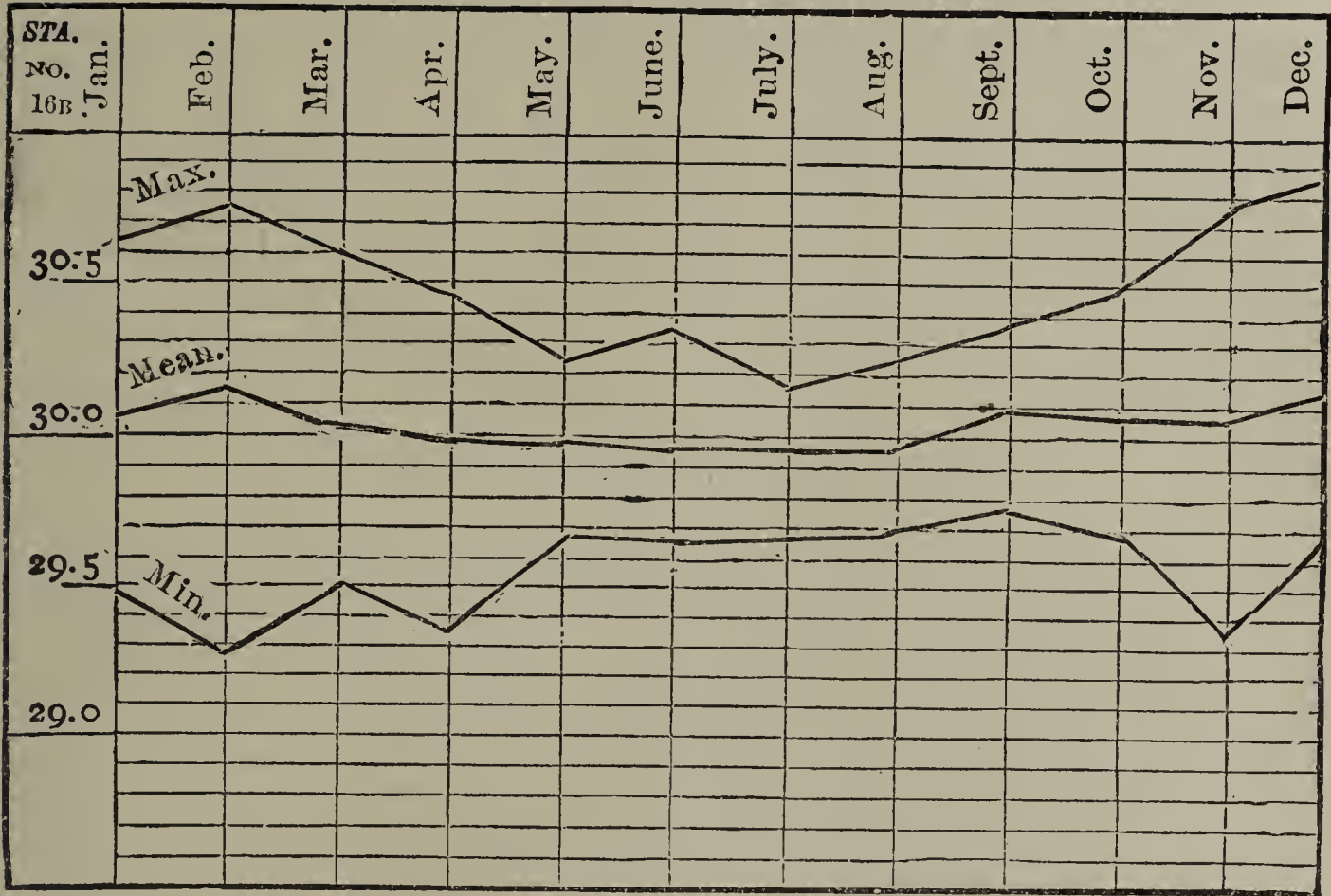
STATION No. 15C.—POMEROY.

Chart showing the monthly maximum, mean and minimum barometer at Pomeroy, for the year ending December 31, 1887.



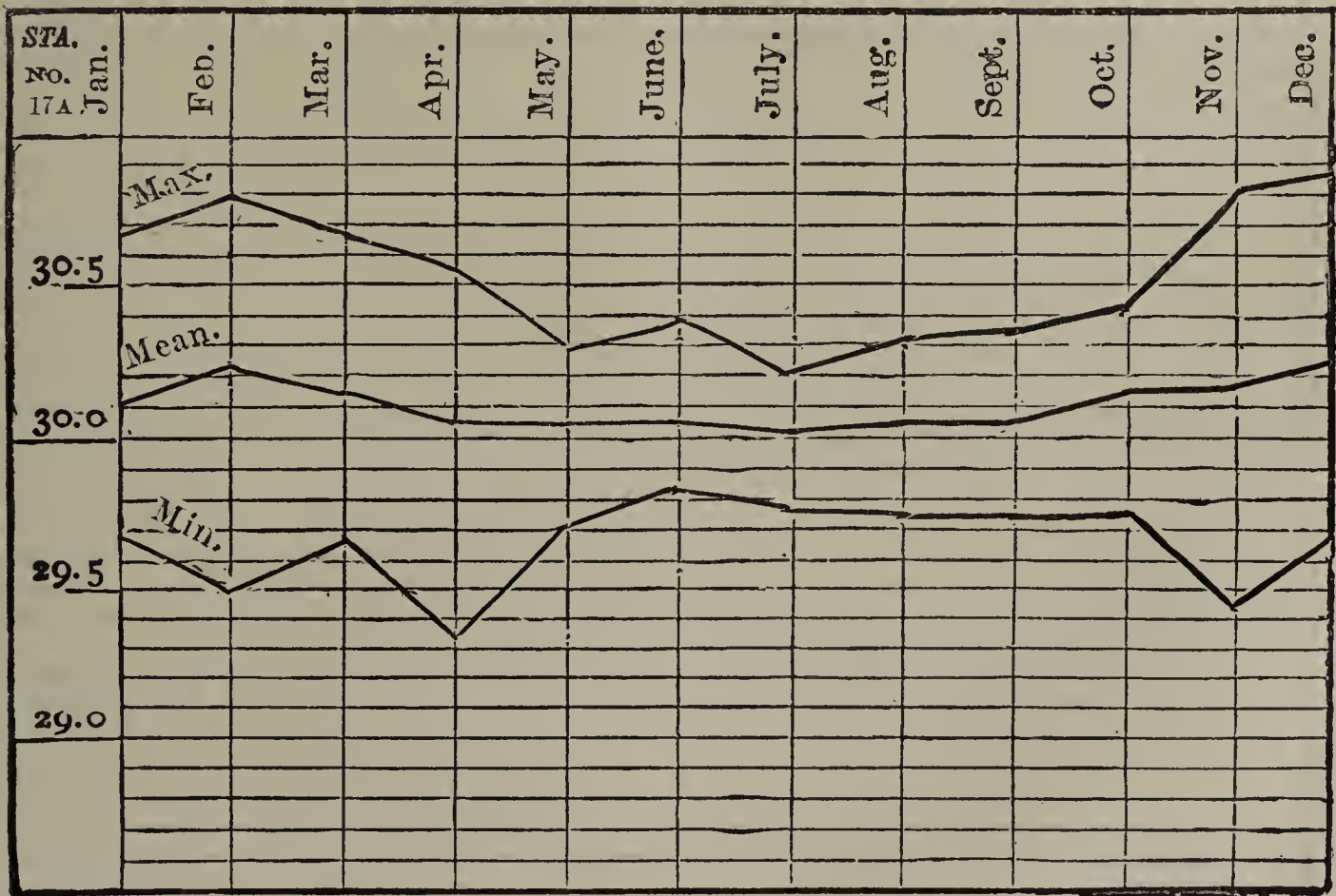
STATION No. 16B.—NEWCOMERSTOWN.

Chart showing the monthly maximum, mean and minimum barometer at Newcomerstown, for the year ending December 31, 1887.



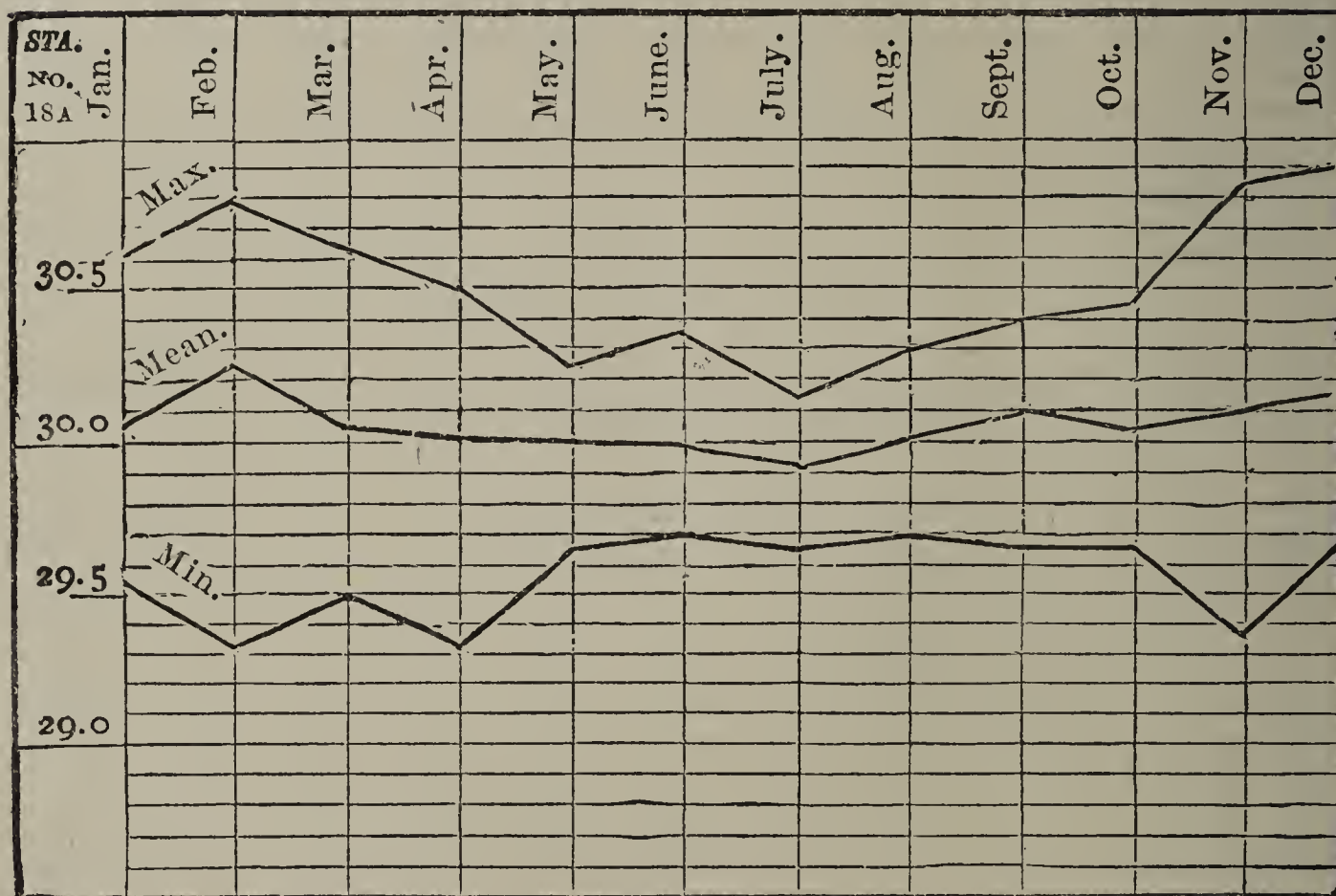
STATION No. 17A.—QUAKER CITY.

Chart showing the monthly maximum, mean and minimum barometer at Quaker City, for the year ending December 31, 1887.



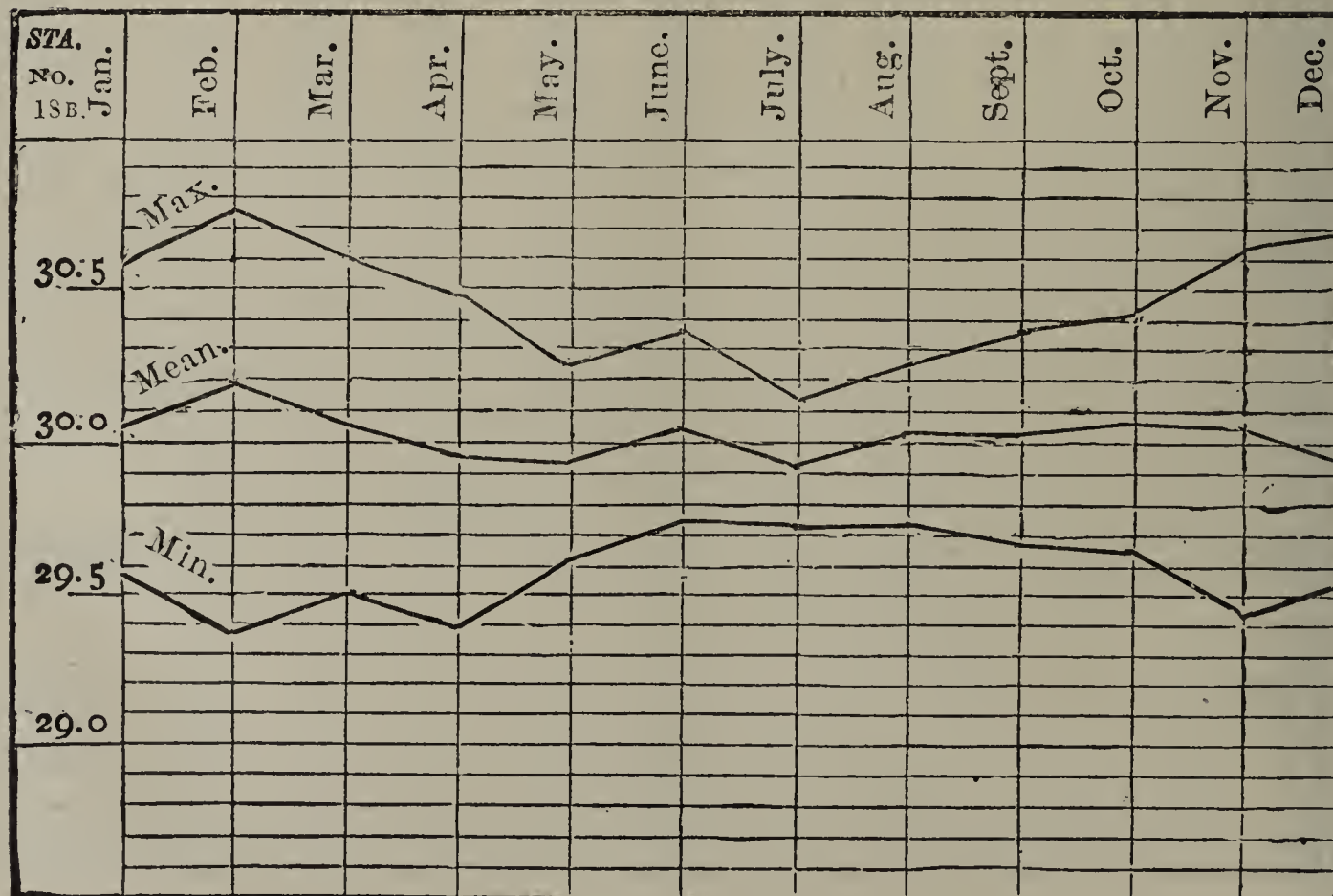
STATION No. 18A.—CANTON.

Chart showing the monthly maximum, mean and minimum barometer at
Canton, for the year ending December 31, 1887.



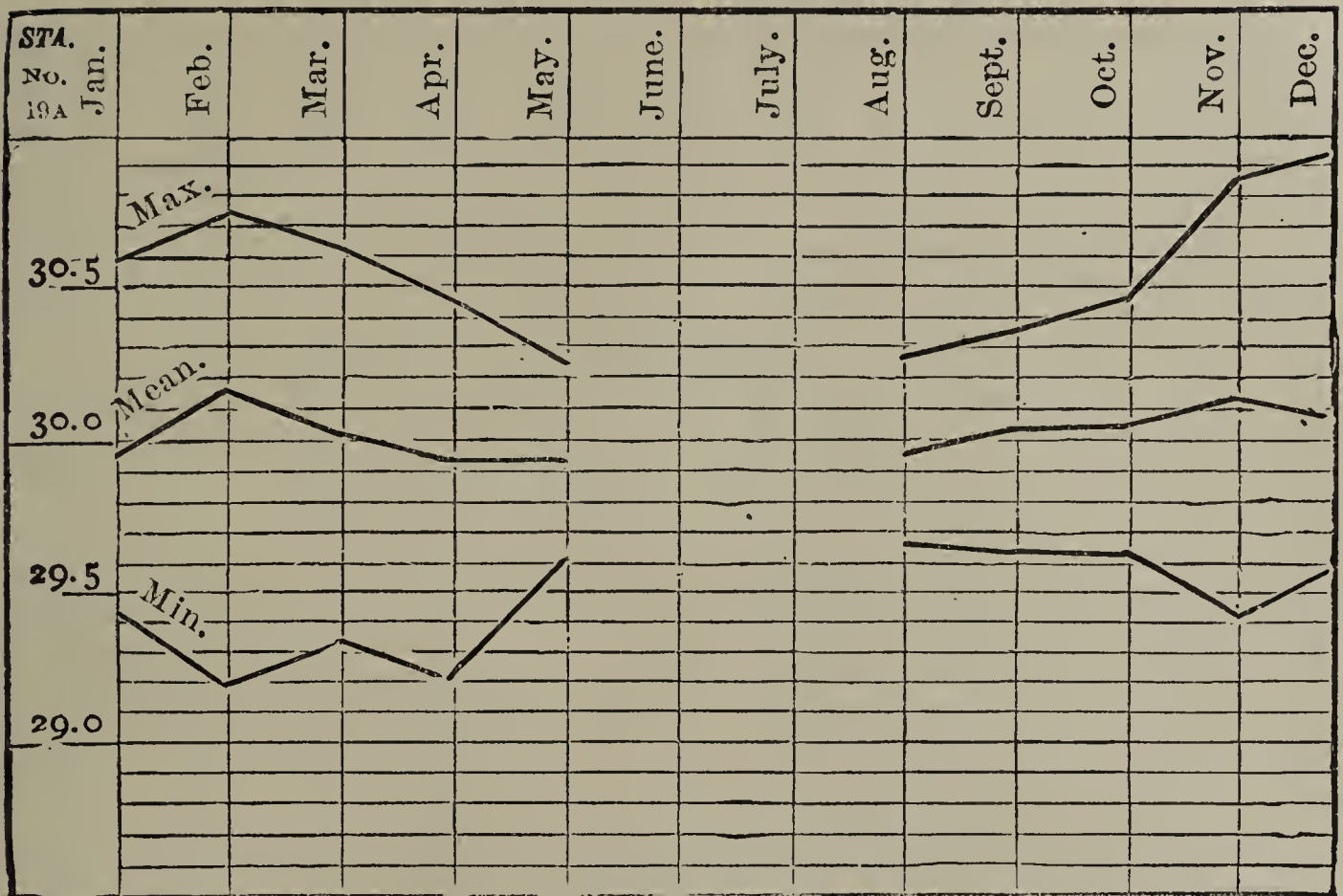
STATION No. 18B.—YOUNGSTOWN.

Chart showing the monthly maximum, mean and minimum barometer at
Youngstown, for the year ending December 31, 1887.



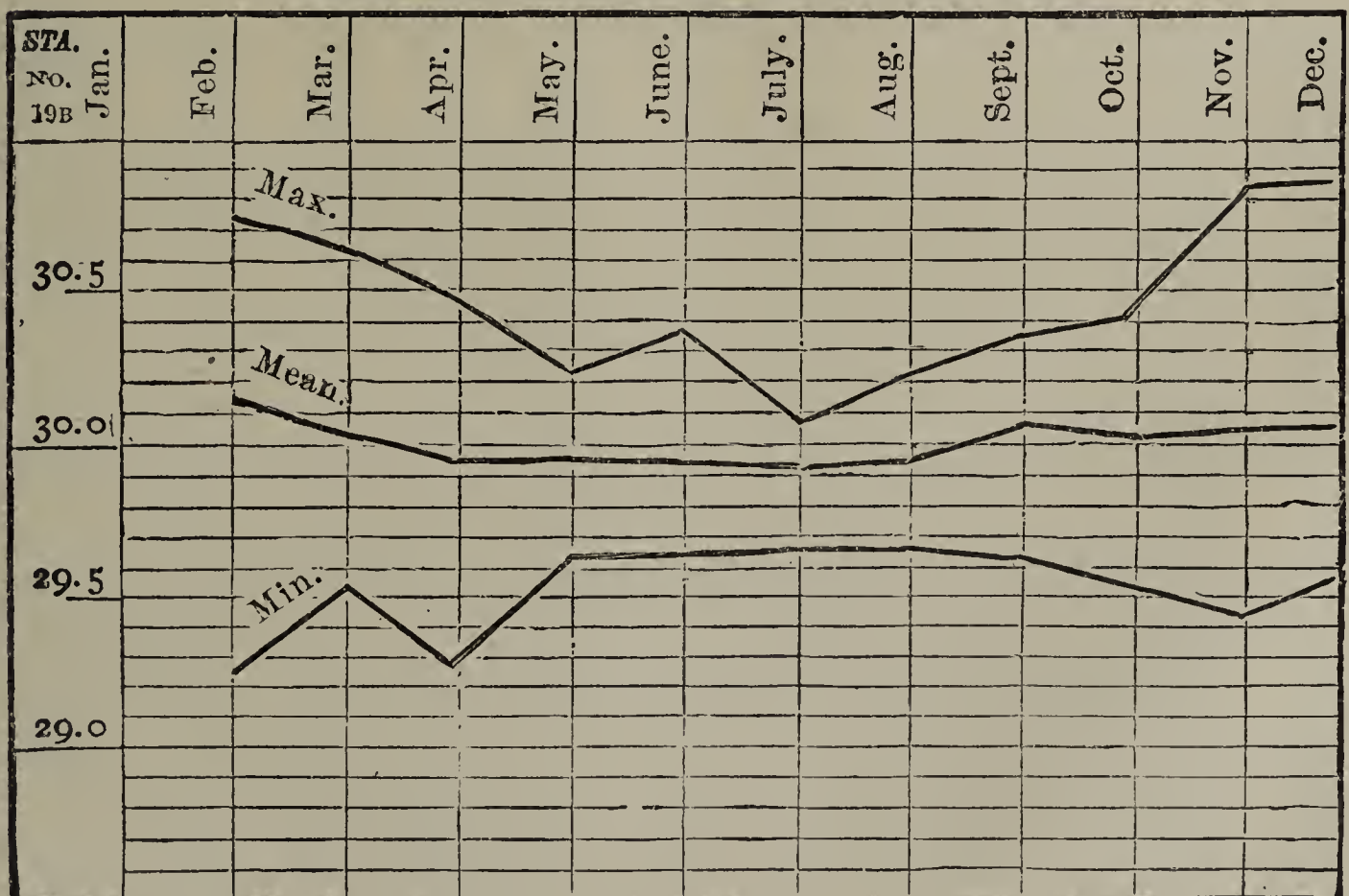
STATION No. 19A.—HIRAM.

Chart showing the monthly maximum, mean and minimum barometer at Hiram, for the year ending December 21, 1887.



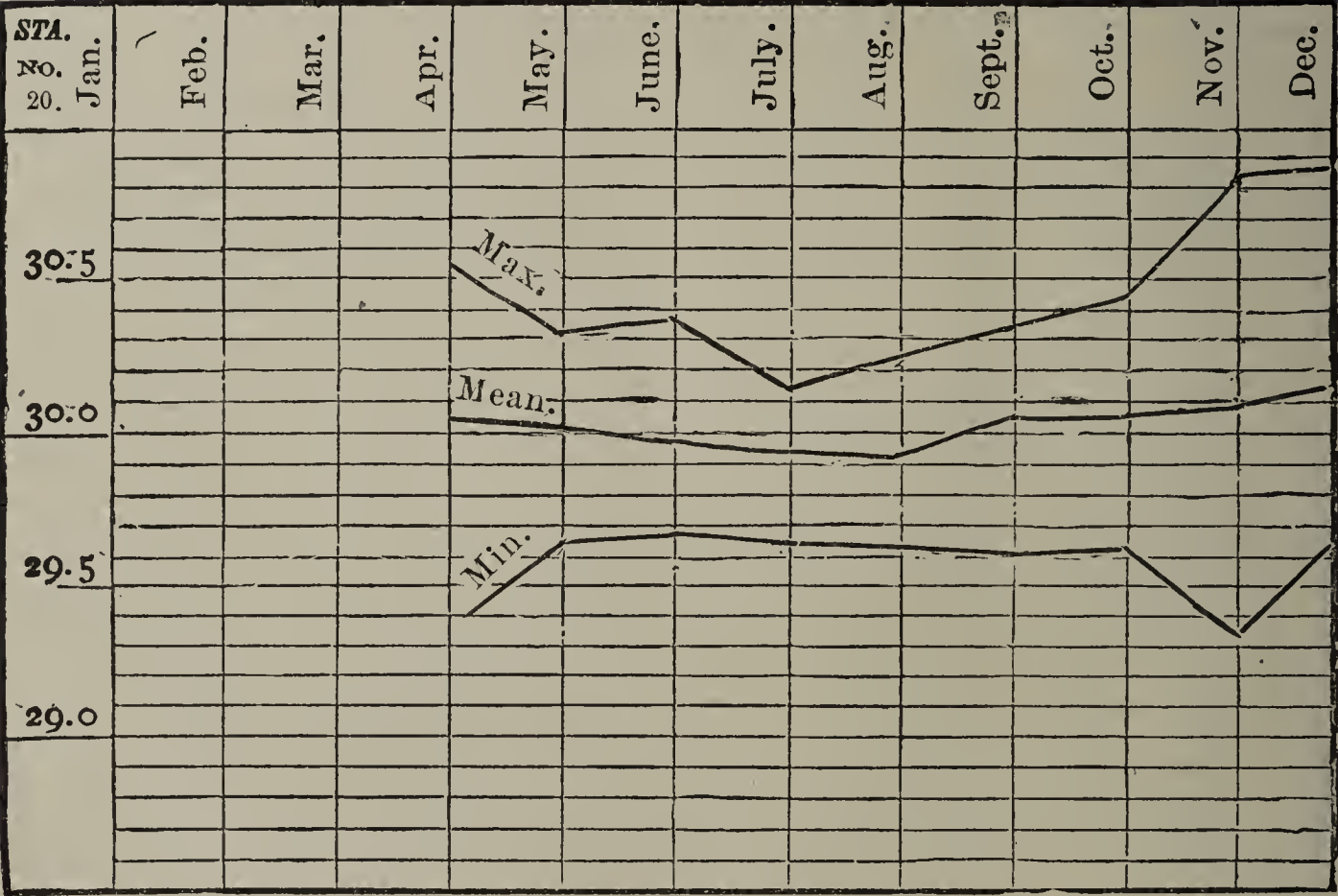
STATION No. 19B.—JEFFERSON.

Chart showing the monthly maximum, mean and minimum barometer at Jefferson, for the year ending December 31, 1887.



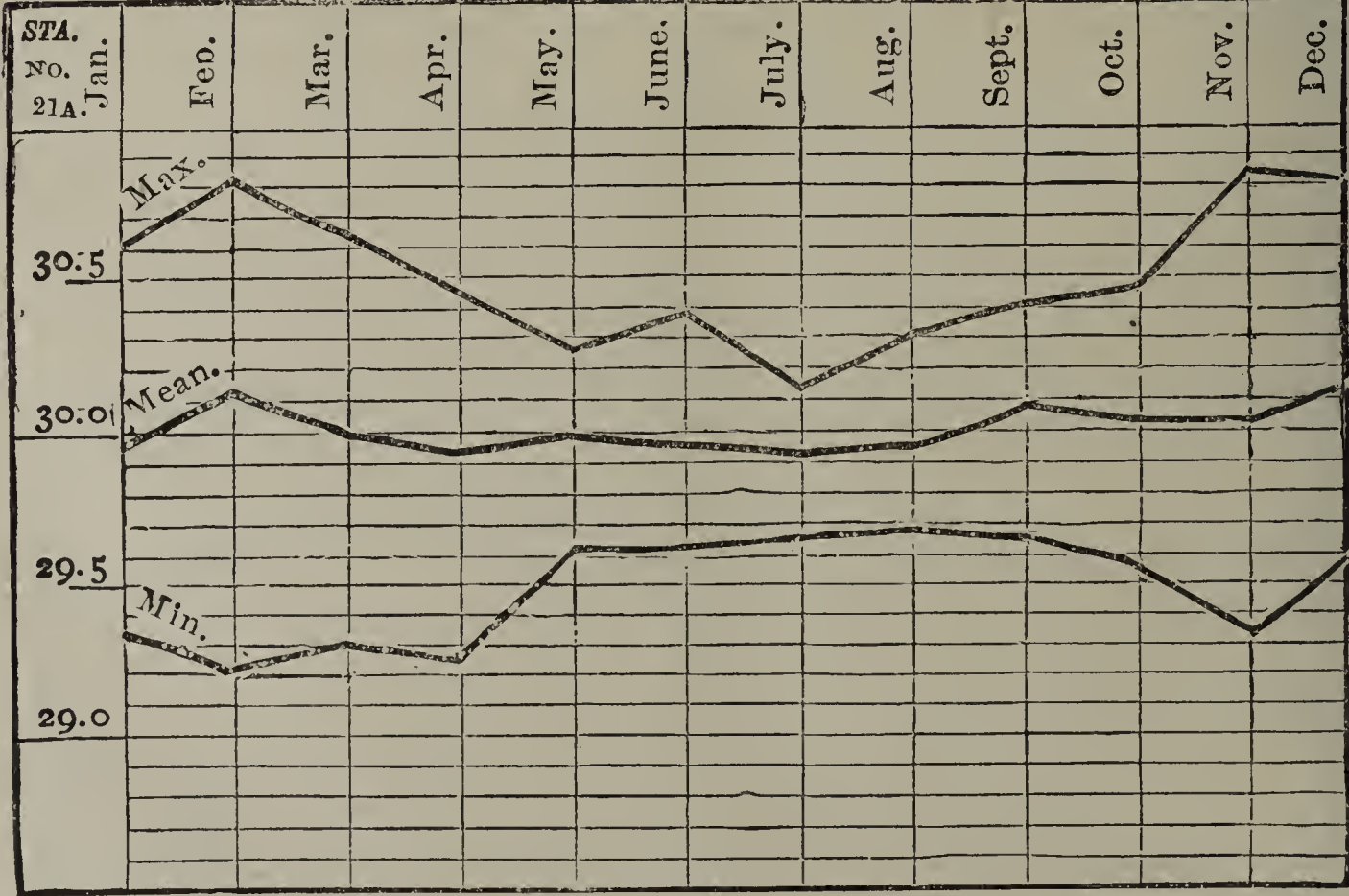
STATION No. 20.—WOOSTER.

Chart showing the monthly maximum, mean and minimum barometer at Wooster, for the year ending December 31, 1887.



STATION No. 21A.—CLEVELAND.

Chart showing the monthly maximum, mean and minimum barometer at Cleveland, for the year ending December 31, 1887.



STATION No. 22.—AKRON.

Chart showing the monthly maximum, mean and minimum barometer at Akron, for the year ending December 31, 1887.

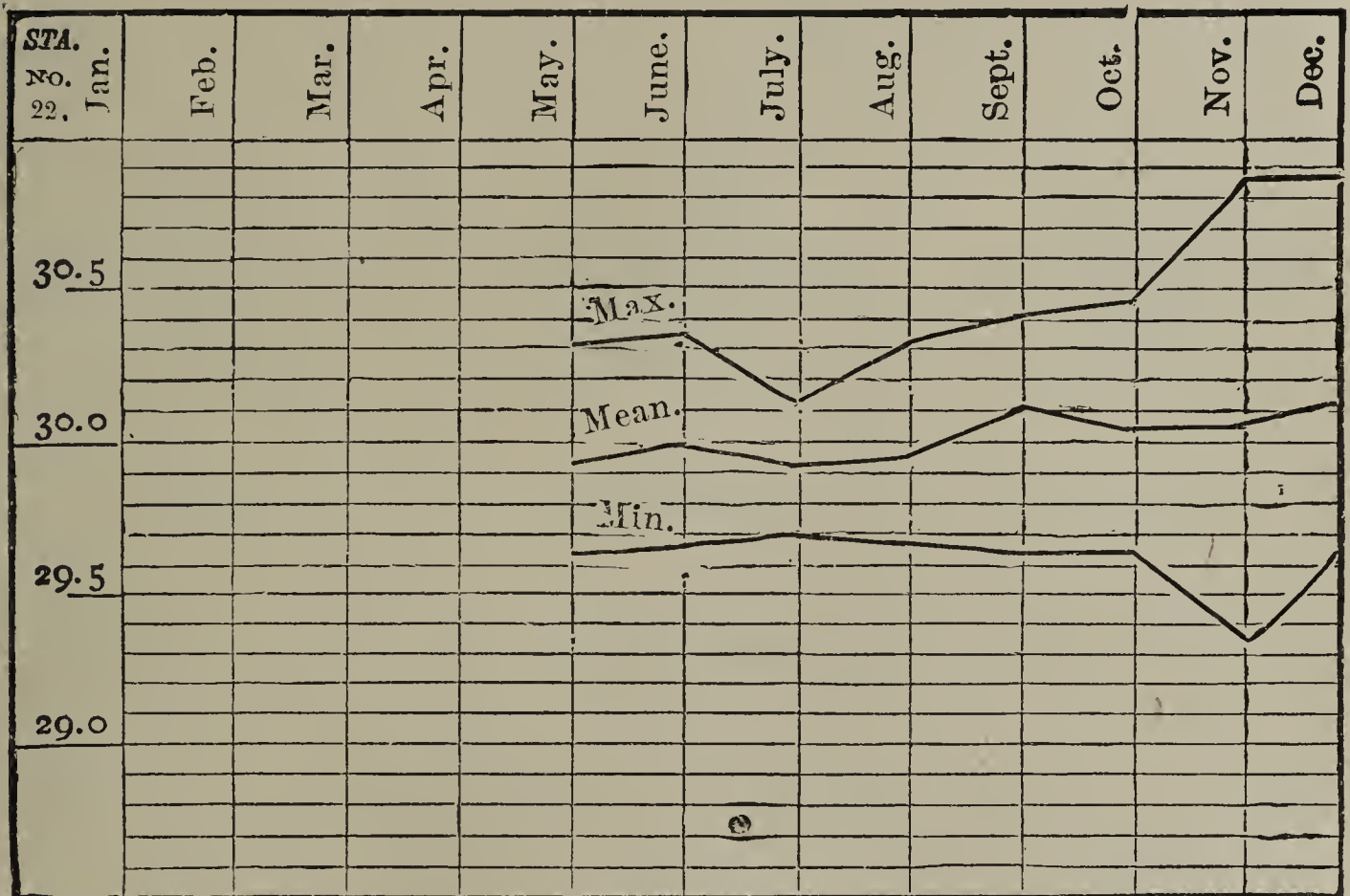


Chart showing the monthly maximum, mean and minimum barometer for the State, for the year ending December 31, 1887.

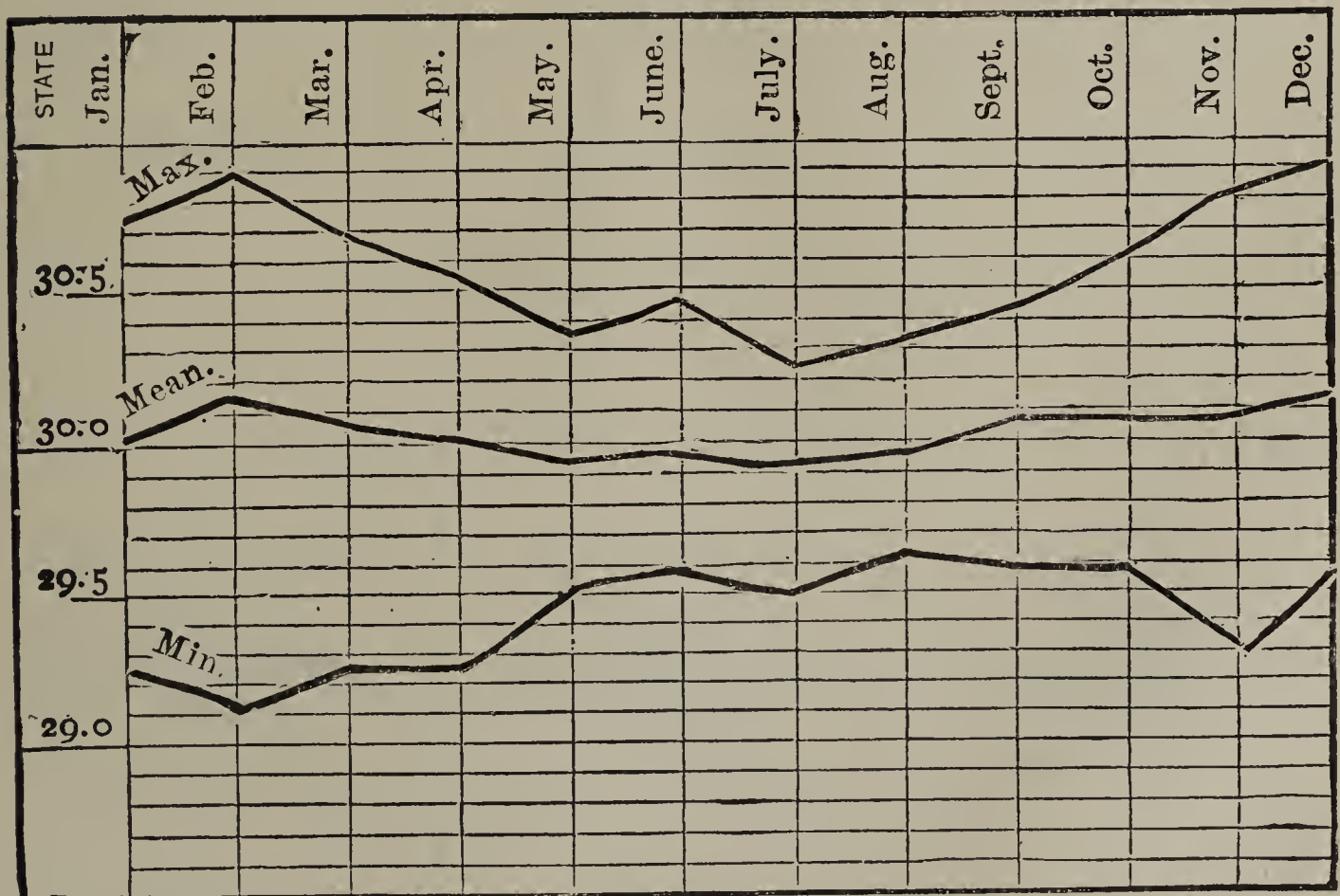
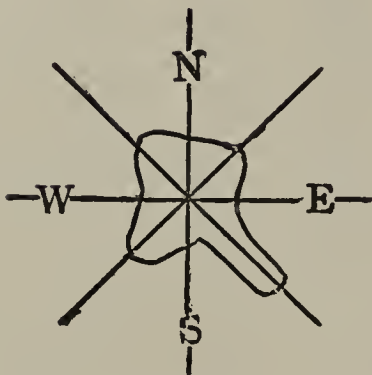


CHART SHOWING PREVAILING DIRECTION OF WIND

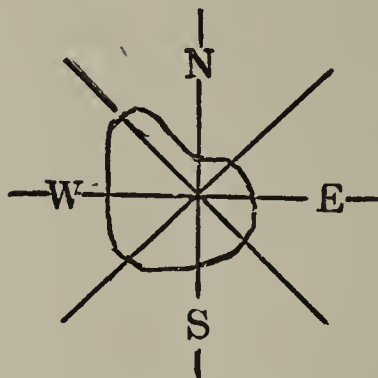
At the different Stations, for the year ending December 31, 1887.

STA. 1.



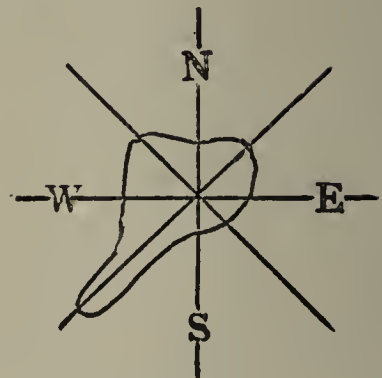
Cincinnati.

STA. 2.



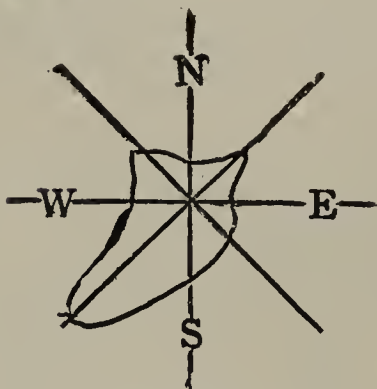
College Hill.

STA. 3.



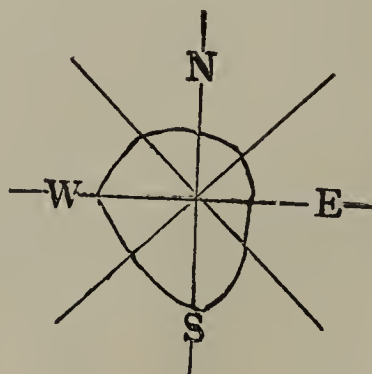
Dayton.

STA. 4B.



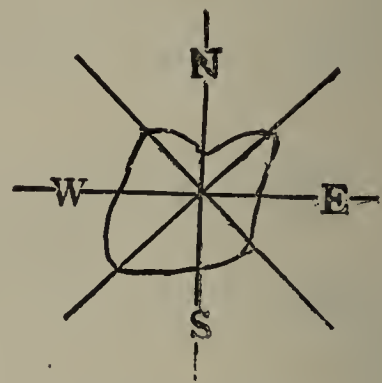
Sidney.

STA. 4C.



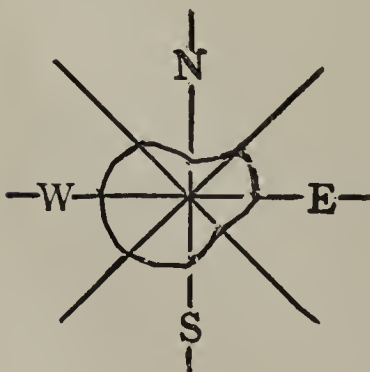
Greenville.

STA. 5A.



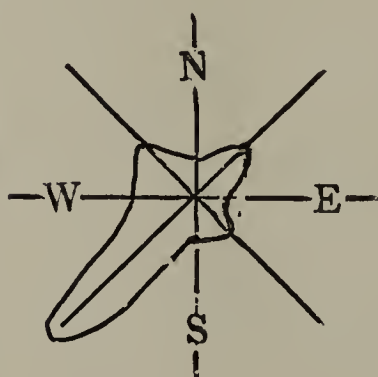
Upper Sandusky.

STA. 6A.



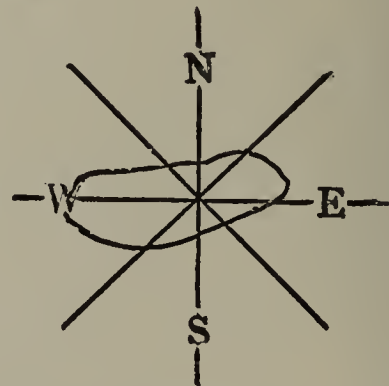
Wauseon.

STA. 6B.



Paulding.

STA. 6C.

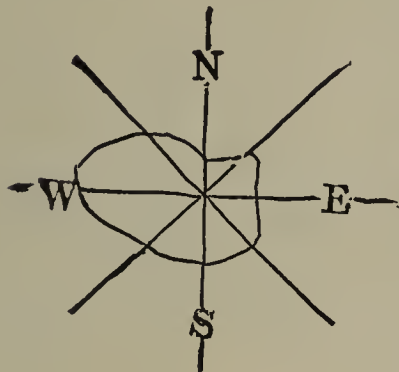


Napoleon.

CHART SHOWING THE PREVAILING DIRECTION OF WIND

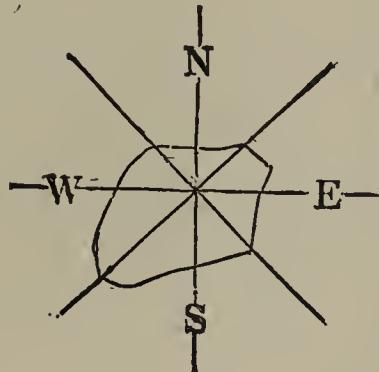
At the different Stations, for the year ending December 31, 1887.

STA. 7A.



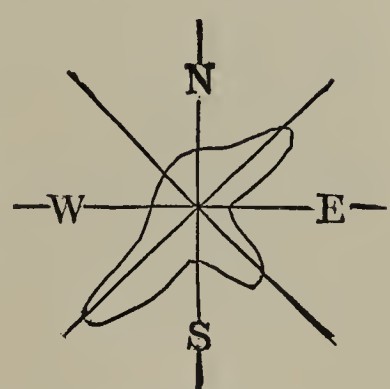
Clarksville.

STA. 7B.



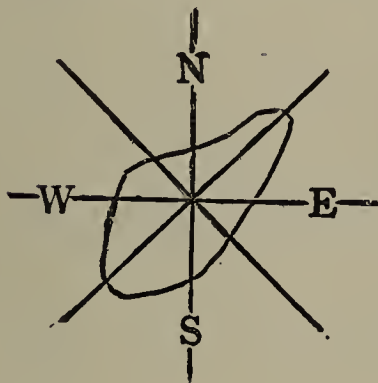
Yellow Springs.

STA. 9A.



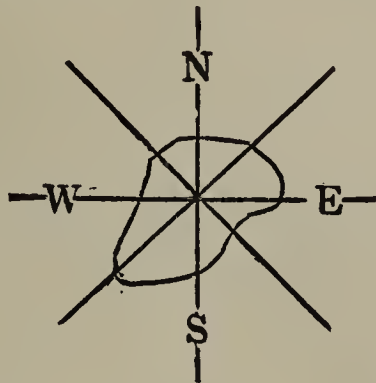
Bangorville.

STA. 10A.



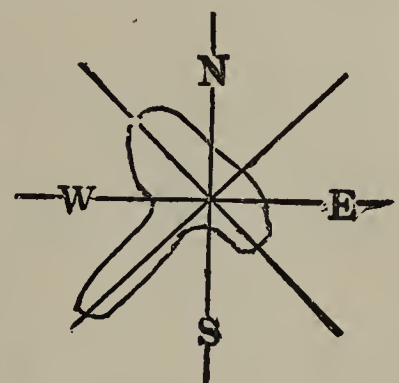
Toledo.

STA. 10B.



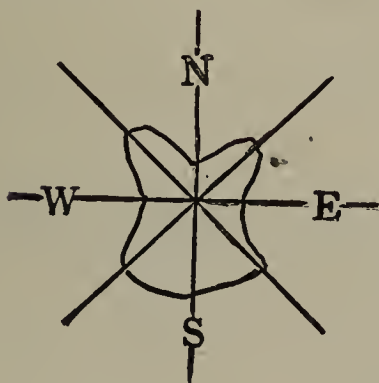
Sandusky.

STA. 11B.



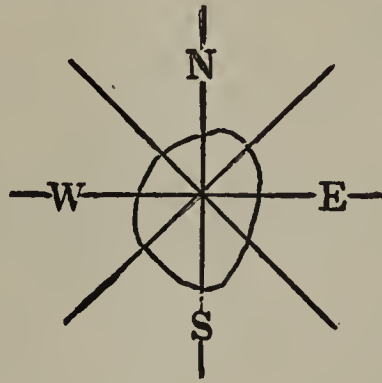
Portsmouth.

STA. 12C.



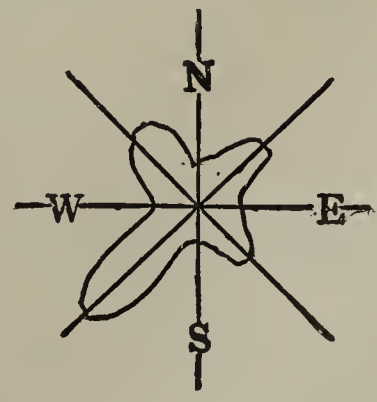
Georgetown.

STA. 13A.



Columbus.

STA. 13B.

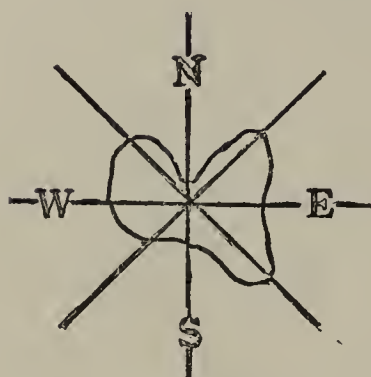


Ohio State University.

CHART SHOWING PREVAILING DIRECTION OF WIND

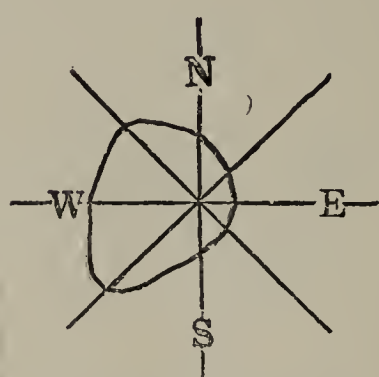
At the different Stations, for the year ending December 31, 1887.

STA. 13 D.



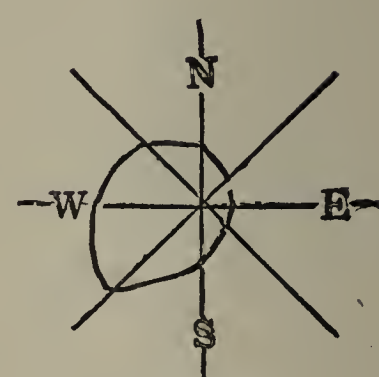
Logan.

STA. 14.



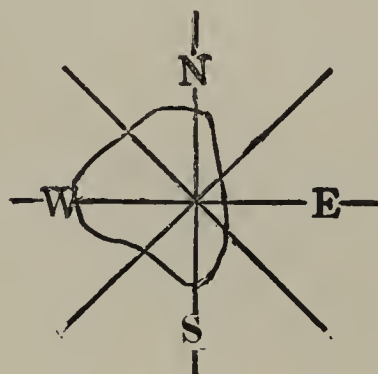
Oberlin.

STA. 15 A.



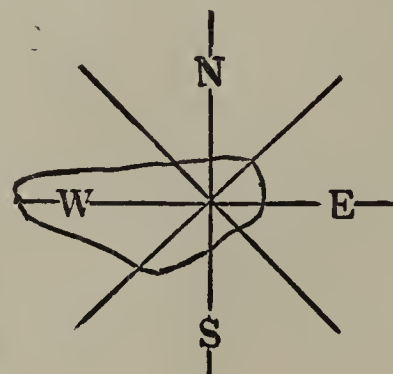
Marietta.

STA. 15 E.



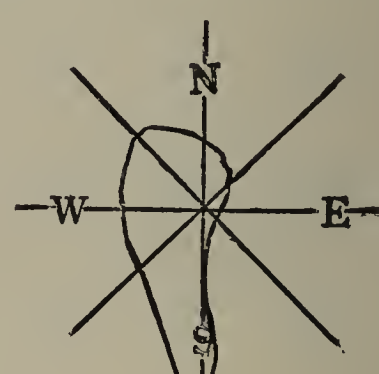
McConnelsville.

STA. 16 B.



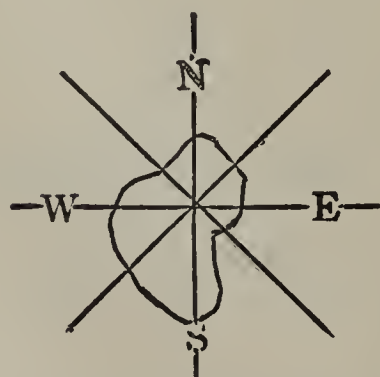
Newcomerstown.

STA. 17 A.



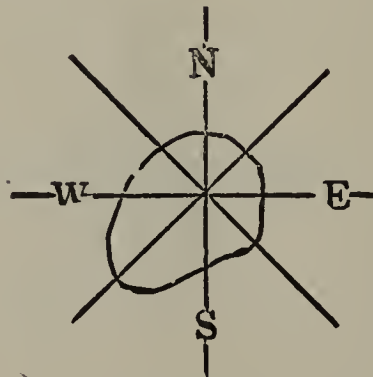
Quaker City.

STA. 17 B.



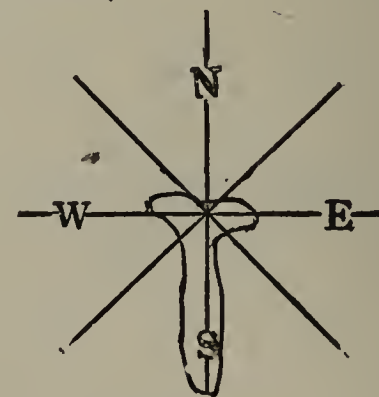
New Alexandria.

STA. 18 A.



Canton.

STA. 18 B.

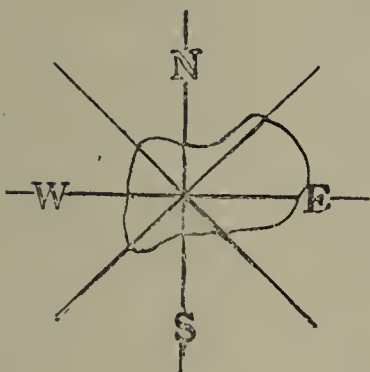


Youngstown.

CHART SHOWING PREVAILING DIRECTION OF WIND

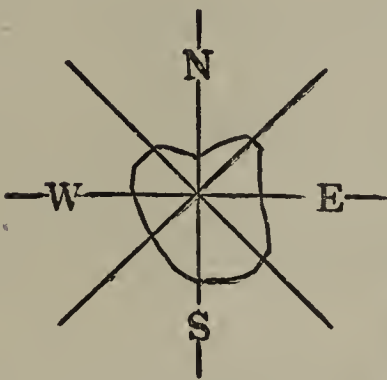
At the different Stations, for the year ending December 31, 1887.

STA 19A.



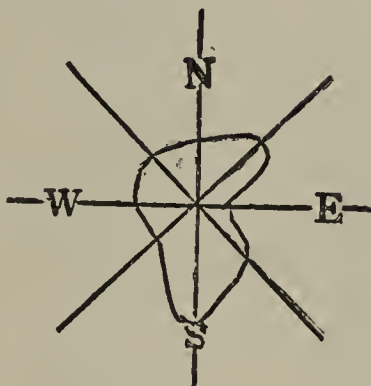
Hiram.

STA 21A



Cleveland.

STA 21B



Cleveland.

CHART SHOWING THE PREVAILING DIRECTION OF WIND

For the State, for the year ending December 31, 1887.

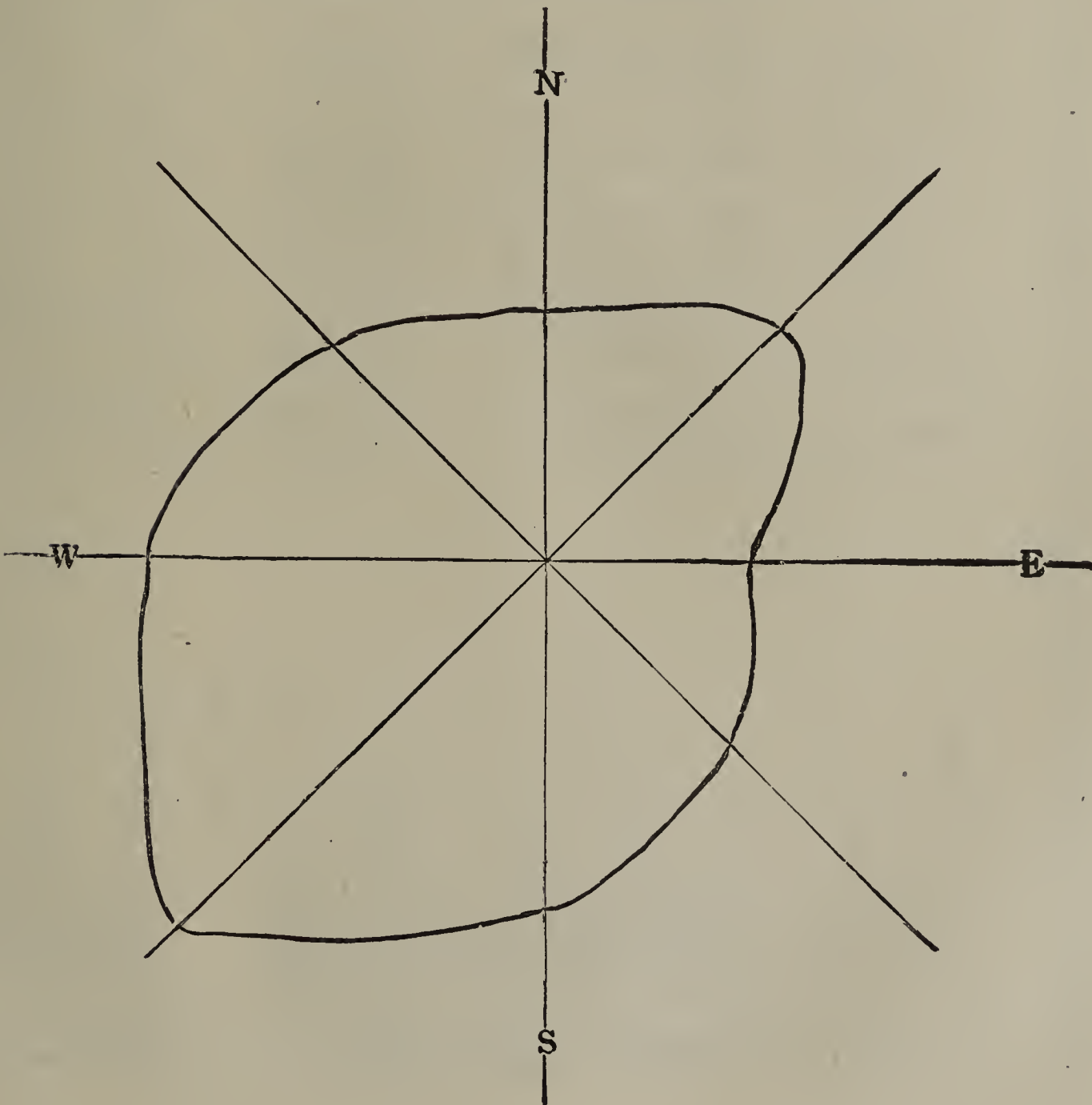


TABLE SHOWING MONTHLY AND ANNUAL RAINFALL AT EACH STATION FOR YEAR BEGINNING JANUARY 1, 1887, AND ENDING DECEMBER 1, 1887.

Number.	Stations.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
<i>Northern Section.</i>														
5A	Upper Sandusky.....	2.08	6.54	2.52	2.18	2.84	4.57	1.69	2.19	2.07	1.07	2.69	3.85	34.29
6A	Wauseon.....	2.36	7.19	1.49	1.52	3.50	3.55	2.87	1.52	1.70	1.97	3.78	2.71	34.16
6B	Paulding..	2.42	6.23	1.51	1.68	2.61	5.89	0.13	1.61	2.26	1.59	3.64	2.63	32.20
6C	Napoleon.....	1.85	5.46	1.21	1.92	2.73	3.19	1.33	1.42	1.12	2.15	3.10	2.51	27.99
10A	Toledo	2.21	6.84	1.12	1.57	1.46	3.26	3.13	1.81	3.37	1.82	2.4	2.78	31.61
10B	Sandusky	1.51	8.53	2.16	2.10	1.61	4.44	0.59	1.57	2.31	0.88	2.25	1.90	29.85
14	Oberlin	2.00	3.05	1.55	1.13	3.74	5.59	0.61	2.24	2.20	0.63	1.79	1.11	25.64
18A	Canton.....	1.50	6.95	1.76	3.21	3.24	3.32	4.86	2.32	2.42	0.71	2.01	1.77	34.07
18B	Youngstown..	1.12	6.60	2.74	1.80	2.11	2.86	1.54	2.23	2.01	0.68	1.31	1.14	26.20
19A	Hiram	1.83	9.56	2.86	3.98	3.50	.....	.....	2.83	3.74	1.86	2.60	2.35	.....
19B	Jefferson .....	.....	6.22	3.66	2.61	2.99	2.49	1.68	2.36	2.81	3.55	3.15	1.87	.....
20	Wooster .....	.....	.....	2.71	2.99	3.48	5.78	0.94	1.80	2.08	1.10	2.21	2.68	.....
21A	Cleveland (S. O.).....	1.92	7.73	3.05	1.82	3.45	2.43	0.99	3.52	3.62	1.80	2.97	2.06	35.36
21B	Cleveland (Hyde).....	2.21	7.54	2.89	2.89	3.77	2.99	1.34	3.51	3.78	2.45	3.18	1.77	38.32
22	Akron .....	.....	.....	.....	.....	1.62	4.12	3.14	4.01	1.47	0.94	2.34	2.00	.....
	Hudson	2.26	6.66	2.73	2.88	3.37	6.67	1.12	1.13	2.04	1.40	2.61	2.16	35.03
	Weymouth	1.76	6.04	2.05	2.96	2.54	4.43	0.92	1.43	2.26	1.37	3.19	2.32	31.27
	Ellsworth	1.24	6.12	.....	2.52	2.80	2.88	1.89	2.94	1.75	0.95	2.25	2.10	.....
<i>Middle Section.</i>														
4A	New Bremen	1.80	7.05	.....	2.34	.....	.....	2.55	2.74	1.59	0.92	4.82	4.83	.....
4B	Sidney	1.89	5.95	0.54	3.90	3.35	2.80	4.20	2.35	2.85	0.60	4.10	3.00	35.53
4C	Greenville.....	2.84	5.31	1.95	3.25	3.41	3.72	0.92	4.65	1.78	0.89	2.96	2.78	34.46
4D ²	Celina .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.32	2.35	2.01	.....
8	North Lewisburg	3.05	5.60	2.20	3.70	.....	2.65	2.05	3.05	2.05	0.45	3.20	2.45	.....
9A	Bangorville	2.04	6.70	2.87	3.12	3.99	4.52	2.13	2.44	1.51	0.63	2.82	2.04	34.81
13A	Columbus	2.35	6.48	2.56	3.44	2.97	2.82	1.45	2.21	1.35	0.30	2.45	1.87	30.25

TABLE SHOWING MONTHLY AND ANNUAL RAINFALL, ETC.—Concluded.

Number.	Sections.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
13B	O. S. University	1.54	6.85	2.84	4.45	4.36	5.47	1.56	2.47	1.82	0.38	2.84	2.04	36.62
13C	Westerville.....	1.81	4.37	2.39	4.06	1.74	2.85	.....	.....	.....	0.40	3.00	2.34	.....
16B	Newcomerstown... ..	2.31	6.80	1.37	4.44	4.84	6.25	4.11	2.28	2.75	0.95	2.43	1.31	39.84
17A	Quaker City.....	2.26	6.46	1.46	3.53	5.70	3.47	4.61	1.64	2.63	0.99	3.06	2.60	38.41
17B	New Alexandria... ..	2.67	5.27	1.33	2.60	2.11	5.55	2.39	2.40	1.98	0.87	2.40	2.38	31.95
<i>Southern Section.</i>														
1	Cincinnati.....	2.37	7.29	2.07	5.86	3.62	2.64	1.31	2.81	1.93	0.55	2.83	1.80	35.08
2	College Hill.....	2.47	7.16	2.35	6.17	3.66	1.94	1.27	2.60	2.94	0.39	3.64	2.14	36.73
3	Dayton.....	2.05	5.30	3.39	4.15	2.54	4.33	3.27	2.08	1.37	0.52	3.53	2.51	35.04
7A	Clarksville	1.63	7.41	2.90	6.23	2.08	2.41	1.73	3.04	1.63	0.64	4.33	2.47	36.50
7B	Yellow Springs	2.40	5.88	2.45	4.83	3.30	1.71	1.00	2.42	1.48	0.45	3.45	3.31	32.68
11A	Hanging Rock	3.11	10.38	1.59	5.93	2.65	3.37	3.54	2.52	2.41	0.92	2.02	2.29	40.73
11B	Portsmouth	2.87	10.18	1.94	6.01	1.77	2.88	4.12	1.75	2.09	0.72	2.47	4.24	41.04
12A	Washington C. H	1.85	5.80	2.19	5.96	2.27	1.69	.....	3.15	1.44	0.61	.....	3.66	.....
12B	Waverly	2.14	9.62	1.60	6.87	1.28	2.70	3.57	.....	1.94	0.36	2.91	3.25	.....
12C	Georgetown	2.50	9.96	1.63	8.28	3.39	3.96	1.60	2.66	3.11	1.01	3.41	2.84	44.35
13D	Logan.....	1.38	7.62	1.87	6.70	2.60	6.16	3.90	2.59	1.82	0.78	3.28	1.66	40.36
15A	Marietta	2.54	7.57	1.38	5.65	3.07	5.81	1.12	2.56	2.30	0.65	2.19	2.48	37.32
15B	McConnelsville.....	1.74	6.94	1.76	5.86	3.40	4.35	3.62	0.55	1.65	0.52	2.74	2.15	35.28
15C	Pomeroy .....	.....	9.34	2.37	3.27	2.03	3.00	4.18	0.97	1.93	0.82	1.69	3.27	.....
	Waynesville.....	2.83	7.70	3.42	5.90	3.23	4.19	1.10	1.68	1.60	0.43	3.65	2.73	37.46

MISCELLANEOUS DATA FURNISHED BY OBSERVERS FROM
DIFFERENT POINTS OVER THE STATE.

The mean barometer for the year 1887, 30.050, is .018 inch above the average. The highest barometer, 30.878, occurred at 9:40 A.M., 30th of November; the lowest, 29.179, at 8:45 A.M., February 18. Range for the year, 1.699 inches.

The mean relative humidity of the year, 70 per cent. There were several times that it was 100 per cent., and on the 18th of November it was only 11.4 per cent.

The mean temperature of the year, 48°.0, is 0°.3 above the average. The warmest year, 50°.3, was 1878; the coldest, 44°.2, was 1875.

The highest temperature during the year was 101°.2, on July 17; the lowest, —19°.5, January 7. Annual range, 120°.7, is 4°.3 more than the average. The total range of temperature in eighteen years, is 136°.9; the highest, 104°.5, having occurred July 7, 1874, and the lowest, —32°.4, December 19, 1884.

Mean daily range of temperature during the year, 23°8. Greatest daily range, 50°.6, April 12; least daily range, 3°.8, December 12.

Mean temperature of the warmest day of the year, July 17, was 86°.2. Of the coldest day, January 7, —4°.1. The mean temperature of the warmest day in eighteen years, June 28, 1874, was 88°.5; of the coldest, January 9, 1875, —16°.4.

The total precipitation of the year, 34.14 inches, is 3.83 below the average. The largest annual precipitation, 49.58 inches, was in 1876; the smallest, 30.38 inches in 1886.

The greatest depth of rainfall in twenty-four hours during the year, 2.28 inches, occurred between 8:25 A.M. the 26th, and 7:00 A.M. the 27th of November. The heaviest rain I have known, occurred on the afternoon of June 8, 1881, when 7:00 inches of water fell in an hour and a half.

The total snowfall of the year, 38.7 inches, is 12.8 inches less than the average. The largest annual snowfall, 78.2 inches, occurred in 1875; the smallest, 30.2 inches, in 1880.

The prevailing direction of the wind during the year was S.W.

Average cloudiness of the year, .58.

Number of clear days, 102.

Number of fair days, 139.

Number of cloudy days, 124.

Number of rainy days, 150.

THOS. MIKESELL, *Observer.*

YEARLY SUMMARY OF 1887.

Lordstown, Ohio.

Mean barometer, 30.056.

Mean temperature, 49°.3.

Snowfall, 40 inches.

Rain and melted snow, 29.95 inches.

Prevailing wind, S.W.

W. S. DEAN.

MONTHLY RAINFALL REPORT.

Lima, Ohio.

Below is a table showing monthly precipitation (rain and melted snow) for the last seven years in inches and tenths of inches :

1881—January, 6.7; February, 7.0; March, 9.2; April, 3.3; May, 2.9; June, 5.7; July, 3.6; August, 0.9; September, 1.2; October, 4.7; November, 4.6; December, 4.9. Total—56.7.

1882—January, 2.2; February, 4.0; March, 3.3; April, 2.0; May, 5.1; June, 4.7; July, 2.9; August, 7.6; September, 1.2; October, 2.6; November, 3.2; December, 3.0. Total—41.8.

1883—January, 2.8; February, 8.4; March, 0.4; April, 4.1; May, 7.5; June, 6.7; July, 5.9; August, 2.2; September, 2.5; October, 5.5; November, 4.1; December, 4.5. Total—54.6.

1884—January, 3.7; February, 5.6; March, 1.3; April, 3.0; May, 3.9; June, 1.8; July, 4.4; August, 2.6; September, 1.9; October, 1.4; November, 2.2; December, 4.2. Total—37.0.

1885—January, 5.0; February, 1.8; March, 1.2; April, 4.0; May, 5.8; June, 4.3; July, 1.6; August, 4.7; September, 2.2; October, 2.1; November, 1.6; December, 1.5. Total—35.8.

1886—January, 3.1; February, 1.6; March, 2.4; April, 3.6; May, 4.2; June, 2.8; July, 0.4; August, 6.1; September, 1.9; October, 1.6; November, 3.6; December, 6.8. Total—41.2.

1887—January, 4.0; February, 6.6; March, 2.4; April, 3.1; May, 6.2; June, 4.6; July, 2.1; August, 3.2; September, 1.3; October, 1.5; November, 3.8; December, 2.8. Total—41.6.

The monthly average for the eighty-four months is about three and two-thirds inches. Place of taking measurement is four miles south of Lima, and in the summer months gets some of the showers that gather at the St. Mary's reservoir, come easterly and follow up the Auglaize river, leaving Lima to the north. Hence, Lima's rainfall in summer is probably a little less than shown by the above table. Total for the seven years, 308 7-10 inches.

F. Y. DAVIS.

MIGRATION OF BIRDS, AS OBSERVED AT WAUSEON, FULTON COUNTY, OHIO, IN 1887, BY THOS. MIKESELL.

Name of Bird.	What is its general habit?*	When was it first seen?	About how many seen?	When was it next seen?	When did it become common?	When did the bulk depart?	When was it last seen?	Is it common or rare?
Robin	S.R.	Feb. 26	1	March 2	March 7	Oct. 10	Nov. 11	Abundant.
Wood Thrush	S.R.	April 26	1	April 27	May 10	Sept. 5	Sept. 16	"
Wilson's Thrush.....	S.R.	May 2	1	May 3	May 6	Sept. 7	Sept. 15	Common.
Gray-cheeked Thrush (a) ..	T.V.	May 7	1	May c	May d	.....	May 7	Rare.
Catbird	S.R.	May 2	2	May 3	May 6	Sept. 10	Sept. 18	Common.
Brown Thrush.....	S.R.	April 11	2	April 12	April 25	Sept. 10	Sept. 14	"
Bluebird	S.R.	Feb. 9	2	April 10	March 2	Sept. 10	Sept. 12	"
Blue-gray Gnatcatcher	S.R.	April 20	2	Feb. 10	March d	Oct. 15	Nov. 12	"
House Wren	S.R.	April 30	2	May 6	May d	e	e	Rare.
Sky Lark (z)	S.R.	April f	1	May 1	May 10	Sept. 10	Oct. 4	Common.
Titlark (b)	P.R.	Oct. 1	.....	.....	March 6	.....	Oct. g	"
Black-and-white Creeper.....	T.V.	Oct. 29	10	Oct. 11	Oct. 15	e	Oct. 19	Tol. common.
Blue Golden-winged Warbler.....	S.R.	April 29	1	April 30	Oct. d	e	e	"
Yellow Warbler	S.R.	May 6	3	May 7	May 15	Aug. 30	Sept. 10	Common.
Black-throated Blue Warbler (a).....	S.R.	April 27	3	April 28	May 6	Sept. 5	Sept. 15	"
Yellow-rumped "	T.V.	May 6	2	c	May d	.....	May 6	Rare.
"	T.V.	April 16	2	April 20	April 24	May 5	May 9	Common.
Golden-crowned Thrush	T.V.	Sept. 27	20	Sept. 28	Sept. 28	Oct. 6	Oct. 8	"
Water Wagtail (a)	S.R.	May 4	1	May 5	May 10	Sept. 4	Sept. 15	"
Black-and-yellow Warbler (spring).....	T.V.	April 29	1	May c	May d	.....	April 29	Rare.
"	T.V.	May 2	1	May 3	d	.....	May 18	"
"	T.V.	Oct. 4	1	Oct. 7	d	.....	Oct. 24	"
Maryland Yellow-throat.....	S.R.	May 4	1	May 5	May 11	Sept. 5	Sept. 20	Common.
Redstart	S.R.	May 5	2	May 6	May 11	Sept. 5	Sept. 15	"
Scarlet Tanager.....	S.R.	May 1	1	May 3	May 8	Sept. 5	Sept. 22	"

Barn Swallow	S.R.	April 9	1	April 11	April 26	Sept. 5	Sept. 18	Abundant.
White-bellied Swallow	S.R.	April 15	2	April 25	d	Sept. 2	Sept. 12	Tol. common.
Eave Swallow	S.R.	May 2	2	May 3	May 8	Aug. 10	Sept. 13	Common.
Purple Martin	S.R.	April 13	2	April 25	May 2	e	Aug. 20	"
Red-eyed Vireo.....	S.R.	May 3	1	May 4	May 12	Sept. 5	Sept. 16	"
Warbling Vireo.....	S.R.	May 1	1	May 2	May 7	Sept. 8	Sept. 20	"
Yellow-throated Vireo	S.R.	May 3	1	May 4	May 15	Sept. 4	Sept. 20	"
White-rumped Shrike.....	S.R.	h	.....	.....	d	.....	Dec. 15	Rare.
Purple Finch (a).....	T.V.	April 16	2	April 21	d	.....	May 1	"
Red-poll Linnet (b).....	T.V.	Oct. 4	11	Oct. 6	d	.....	Nov. 16	Abundant.
Grass Finch (y).....	S.R.	April 2	2	April 3	April 8	Oct. 20	Oct. 31	"
Song Sparrow (z)	P.R.	f	.....	.....	Mar. 25	.....	g	Abundant.
Snowbird.....	W.V.	Oct. 11	50	Oct. 12	Mar. 11	April 15	April 26	"
Tree Sparrow.....	W.V.	Nov. 21	5	Nov. 22	Oct. 11	April 2	April 10	"
Chipping Sparrow	S.R.	April 1	1	April 9	Nov. 22	April 25	Oct. 17	Common.
Field Sparrow	S.R.	April 3	1	April 6	April 13	Sept. 24	Oct. 12	"
White-throated Sparrow (spring).....	T.V.	April 26	3	April 27	April 15	.....	May 14	Rare.
" (fall)	T.V.	Oct. 10	2	Oct. 11	d	.....	Oct. 14	"
White-crowned Sparrow (spring).....	T.V.	May 3	1	May 4	May 12	e	May 18	Common.
" (fall)	T.V.	Oct. 6	6	Oct. 7	Oct. 10	e	Oct. 17	"
Black-throated Bunting	S.R.	June 3	2	June 4	d	.....	Sept. 5	Rare.
Rose-breasted Grosbeak.....	S.R.	May 2	3	May 3	May 6	Sept. 5	Sept. 25	Common.
Indigo Bird.....	S.R.	May 9	2	May 10	May 15	Sept. 10	Sept. 15	"
Chewink	S.R.	May 10	1	May 13	April 10	Oct. 1	Nov. 8	"
Bobolink	S.R.	April 30	1	May 2	May 3	Sept. 5	Sept. 22	"
Cowbird	S.R.	Mar. 9	1	Mar. 10	May 20	Nov. 4	Nov. 7	Abundant.
Red-winged Blackbird	S.R.	Mar. 2	200	Mar. 7	Mar. 13	Oct. 30	Nov. 9	"
Meadow Lark.....	S.R.	Mar. 2	1	Mar. 3	Mar. 7	Oct. 28	Nov. 16	Common.
Orchard Oriole	S.R.	Mar. 2	1	Mar. 3	Mar. 7	Oct. 31	Nov. 8	"
Baltimore Oriole.....	S.R.	April 30	1	May 1	May 7	Aug. 31	Sept. 12	Abundant.
Crow Blackbird.....	S.R.	April 29	1	April 30	May 4	Sept. 5	Sept. 12	"
Rusty Grackle (spring).....	S.R.	Mar. 7	5	Mar. 8	May 21	Nov. 3	Nov. 12	Abundant.
" (fall) ..	T.V.	Mar. 6	1	Mar. 28	d	.....	Mar. 28	Rare.
Raven.....	T.V.	Oct. 29	20	c	d	.....	Oct. 29	"
Common Crow	W.V.	Nov. 14	1	Nov. 18	d	.....	e	Abundant.
Kingbird	S.R.	Feb. 11	2	Feb. 12	Mar. 2	Nov. 28	g	Common.
Great Crested Flycatcher.....	S.R.	May 1	1	May 2	May 11	Sept. 5	Sept. 16	"
Pewee	S.R.	April 25	1	May 14	May 6	Sept. 10	Sept. 14	"
Wood Pewee	S.R.	Mar. 9	2	Mar. 13	April 6	Sept. 10	Sept. 22	"
Least Flycatcher.....	S.R.	May 12	1	May 13	May 25	Sept. 2	Sept. 19	"
	S.R.	April 21	1	May 6	May 14	Sept. 8	Sept. 16	"

MIGRATION OF BIRDS, ETC.—Continued.

Name of Bird.	What is its general habit?	When was it first seen?	About how many seen?	When was it next seen?	When did it become common?	When did the bulk depart?	When was it last seen?	Is it common or rare?
Whippoorwill	S.R.	April 30	1	May 1	May 12	Sept. 5	Sept. 12	Common.
Nighthawk	S.R.	May 6	1	May 7	May 15	Sept. 4	Sept. 16	"
Chimney Swift	S.R.	April 28	2	April 30	May 10	Sept. 1	Sept. 10	"
Ruby-throated Hummingbird	S.R.	May 18	1	e	d	.....	Sept. 3	Rare.
Black-billed Cuckoo	S.R.	May 16	3	May 17	May 20	Sept. 20	Sept. 17	Common.
Yellow-billed Cuckoo	S.R.	May 13	1	May 16	May 20	Sept. 2	Sept. 16	"
Red-headed Woodpecker	S.R.	May 7	1	May 8	April 25	Oct. 15	Oct. 21	"
Turkey Buzzard	S.R.	June 25	1	June 26	d	.....	Oct. 18	Rare.
Killdeer Plover	S.R.	Mar. 7	3	Mar. 8	April 10	Nov. 1	Nov. 11	Common.
American Woodcock	S.R.	Mar. 14	1	Mar. 30	d	.....	e	Rare.
American Snipe	S.R.	Mar. 16	1	c	d	.....	e	"
Solitary Tatler (a)	T.V.	April 14	1	c	d	.....	April 14	"
Spotted Sandpiper	S.R.	April 21	1	April 27	May 12	Sept. 1	Sept. 14	Common.
Great Blue Heron	S.R.	Mar. 7	1	Mar. 16	d	.....	e	Rare.
Canada Goose (spring)	T.V.	Mar. 10	85	Mar. 21	Mar. 21	.....	Mar. 21	Common.
" (fall)	T.V.	Oct. 10	10	Oct. 24	d	.....	Oct. 24	Rare.
Mallard Duck (spring)	T.V.	Feb. 9	12	Feb. 16	Mar. 5	.....	April 10	Common.
" (fall)	T.V.	Oct. 18	20	Oct. 25	d	.....	Oct. 25	Rare.

Explanations of references: * S.R. means summer resident; P.R., part remain all the year; W.V., winter resident; T.V., transient visitant, or migrant only.
a. Not seen during the fall migration. b. Not seen during the spring migration. c. Not seen again. d. Not common at any time. e. Date not known.
f. A few remained all winter. g. A few still remain. y. This is the bird which, in former reports, was called Titlark. z. Resident in part.

OBSERVATIONS OF FOREST AND OTHER TREES, SHRUBS, ETC., AT WAUSEON, OHIO, IN 1887, BY THOS. MIKESELL.

Common Name.	Buds began to open.	First fully formed leaf.	In full leaf.	In blossom.	Fruit ripe.	Complete change of foliage.	Divested of leaves.	Seeds plentiful or scant.
Yellow Parilla.....	May 2	May 9	May 16	June 10	Sept. 10	Sept. 25	Oct. 15	Full.
Prickly-Ash	May 1	May 9	May 24	May 13	Sept. 1	Sept. 18	Sept. 28	Scant.
Bitter Sweet	May 3	May 12	May 25	May 30	Aug. 15	Sept. 28	Oct. 15	"
Wahoo.....	April 10	April 25	May 15	June 13	Oct. 1	Sept. 25	Oct. 12	"
Five-leaved Creeper.....	May 7	May 12	May 20	June 20	Sept. 5	Sept. 25	Oct. 10	"
Bladder Nut.....	April 14	May 3	May 16	May 14	Aug. 5	Sept. 25	Oct. 10	Full.
Ohio Buckeye	April 23	May 3	May 14	May 20	Oct. 10	Sept. 25	Oct. 14	"
Sugar Maple.....	April 25	May 10	May 16	April 28	Aug. 20	Sept. 25	Oct. 5	"
Black Sugar Maple.....	April 26	May 12	May 17	April 20	Aug. 20	Sept. 25	Oct. 5	"
White Maple.....	April 22	May 8	May 16	April 10	May 22	Sept. 20	Sept. 30	"
Red Maple	April 25	May 9	May 16	April 10	May 22	Sept. 25	Oct. 5	"
Ash-leaved Maple.....	April 26	May 11	May 18	May 3	Sept. 18	Sept. 25	Oct. 12	"
Stag-horn Sumac.....	May 8	May 15	May 25	July 2	Sept. 20	Sept. 25	Oct. 10	"
Smooth Sumac.....	May 10	May 16	May 26	June 27	Sept. 25	Sept. 25	Oct. 10	"
Poison Ivy.....	May 9	May 13	May 20	June 12	Sept. 20	Sept. 25	Oct. 2	"
Black Locust.....	May 6	May 17	May 28	May 27	.....	Sept. 20	Oct. 1	"
Coffee Tree.....	May 10	May 18	May 28	June 6	.....	Sept. 25	Oct. 5	None.
Honey Locust	May 8	May 14	May 25	June 3	Sept. 20	Sept. 20	Oct. 2	Full.
Flowering Almond	May 2	May 11	May 20	May 8	.....	Oct. 15	Nov. 1	None.
Meadow Sweet	April 12	April 30	May 10	July 8	.....	Oct. 15	Oct. 25	Full.
Eglantine	April 23	May 1	May 12	None.	.....	Oct. 20	Oct. 30	None.
Swamp Rose.....	April 22	May 2	May 14	June 29	Oct. 10	Oct. 15	Nov. 5	Scant.
Dwarf Wild Rose.....	April 24	May 8	May 16	June 3	Sept. 25	Oct. 15	Oct. 28	"
Sweet Briar	April 25	May 10	May 16	June 25	Oct. 10	Oct. 12	Oct. 25	"

OBSERVATIONS OF FOREST AND OTHER TREES, SHRUBS, ETC.—Concluded.

Common Name.	Buds began to open.	First fully formed leaf.	In full leaf.	In blossom.	Fruit ripe.	Complete change of foliage.	Divested of leaves.	Seeds plentiful or scant.
Scarlet-fruited Thorn	April 25	May 8	May 18	May 12	Sept. 25	Oct. 10	Oct. 16	Scant.
Black Thorn.....	April 23	May 7	May 16	May 11	Sept. 30	Oct. 16	Oct. 20	"
Cockspur Thorn	April 25	May 8	May 17	May 12	Oct. 1	Oct. 16	Oct. 25	"
Witch Hazel	April 27	May 3	May 16	Oct. 8	Sept. 10	Oct. 5	Oct. 12	Frll.
Dogwood.....	May 3	May 10	May 21	May 11	Sept. 12	Oct. 10	Oct. 18	"
Kinnekinick	April 16	May 1	May 14	May 25	Aug. 15	Sept. 25	Oct. 15	"
Pigeon Berry.....	April 20	May 2	May 15	June 6	Aug. 20	Sept. 25	Oct. 20	"
Trumpet Honeysuckle	April 9	April 22	May 3	June 13	.....	Oct. 15	.....	None.
Yellow Honeysuckle.....	April 7	April 18	May 1	May 17	July 13	Sept. 25	Oct. 1	Scant.
Elder	April 20	May 5	May 13	June 16	Aug. 15	Sept. 25	Oct. 1	Full.
Black Haw.....	April 20	May 3	May 12	May 24	Sept. 15	Sept. 20	Sept. 30	"
Dockmackie	April 24	May 5	May 16	June 5	.....	Sept. 25	Oct. 5	Scant.
Snow-ball	April 25	May 5	May 18	May 22	.....	Oct. 16	Nov. 5	None.
Button Bush	May 13	May 19	May 27	June 9	Sept. 30	Sept. 25	Oct. 15	Full.
Black Huckleberry.....	May 6	May 10	May 21	May 20	July 15	Sept. 30	Oct. 25	"
Blue Huckleberry	May 5	May 11	May 22	May 19	July 18	Sept. 25	Oct. 25	"
Persimmon.....	May 11	May 16	May 26	.....	Sept. 20	Oct. 1	Oct. 16	Scant.
Lilac.....	April 10	April 24	May 8	May 11	.....	Oct. 10	Nov. 5	None.
White Ash.....	May 6	May 15	May 25	None.	.....	Sept. 25	Oct. 2	"
Black Ash.....	May 16	May 22	May 30	None.	.....	Sept. 25	Oct. 2	"
Trumpet Creeper.. ..	May 10	May 16	May 28	June 23	.....	Sept. 25	Oct. 5	Full.
Sassafras	May 12	May 18	May 30	May 11	Sept. 20	Sept. 25	Oct. 12	"
Red Elm	April 23	May 10	May 20	April 15	Sept. 20	Sept. 25	Oct. 2	None.
White Elm.....	April 16	May 4	May 12	April 11	May 18	Sept. 25	Oct. 5	Full.

Osage Orange.....	9	May	14	25	June	11	Oct.	10	Sept.	25	Nov.	5	Scant.
Buttonwood	8	May	15	30	July	15	Sept.	20	Sept.	25	Oct.	15	Full.
Black Walnut	12	May	20	30	May	26	Oct.	1	Sept.	20	Oct.	1	Scant.
Shell-bark Hickory	10	May	16	25	May	18	Oct.	1	Sept.	25	Oct.	5	"
Large Shell-bark Hickory.....	11	May	18	26	May	17	Oct.	1	Sept.	25	Oct.	16	"
Small-fruited Hickory.....	12	May	18	26	May	18	Oct.	1	Sept.	25	Oct.	20	"
Mockernut Hickory.....	10	May	17	26	May	19	Oct.	1	Sept.	25	Oct.	10	"
Black Hickory	11	May	17	26	May	16	Oct.	1	Sept.	25	Oct.	30	"
Bitternut Hickory	8	May	15	25	May	14	Oct.	1	Sept.	25	Oct.	10	"
White Oak.....	10	May	16	26	May	20	Sept.	30	Oct.	10	Nov.	1	Full.
Mossy Cup Oak..	6	May	14	25	May	19	Sept.	25	Oct.	15	Oct.	24	"
Swamp White Oak.....	4	May	15	26	May	18	Sept.	28	Oct.	12	Oct.	28	"
Chestnut Oak.....	10	May	18	28	May	22	Sept.	30	Oct.	15	Nov.	5	Scant.
Red Oak.....	8	May	15	26	May	20	Oct.	1	Oct.	15	Nov.	15	Full.
Scarlet Oak.....	8	May	17	28	May	21	Oct.	1	Oct.	8	Nov.	10	"
Black Oak	5	May	15	27	May	20	Oct.	1	Oct.	10	Oct.	28	"
Pin Oak	3	May	14	24	May	18	Oct.	1	Oct.	12	Nov.	15	"
Chestnut... ..	6	May	17	28	None.	None.	.....	.....	Sept.	25	Sept.	30	None.
Hazel	26	April	6	15	April	18	Sept.	20	Sept.	25	Oct.	10	Full.
Ironwood	26	April	3	12	May	10	Aug.	30	Sept.	25	Oct.	20	"
Water Beech ..	26	April	2	10	May	8	Sept.	15	Sept.	20	Sept.	25	"
Prairie Willow.....	25	April	2	10	April	10	May	10	Sept.	20	Oct.	20	"
Golden Willow.....	11	April	25	5	May	12	May	30	Sept.	26	Nov.	10	"
Black Willow.....	15	April	8	13	May	10	May	22	Oct.	25	Oct.	25	"
Weeping Willow	30	April	11	18	None.	None.	.....	.....	Oct.	26	Nov.	10	None.
Quaking Asp	26	April	3	10	May	11	May	10	Oct.	10	Nov.	8	Full.
Michigan Poplar.....	11	May	18	26	May	21	May	18	Oct.	6	Nov.	28	"
Silver-leaved Poplar.....	4	May	11	16	May	11	May	8	Oct.	26	Nov.	10	"
Lombardy Poplar.....	28	April	3	11	May	16	May	16	Oct.	26	Nov.	12	"
Cottonwood	9	May	15	25	May	27	May	28	Oct.	10	Oct.	20	"
Balm of Gilead.....	25	April	6	10	May	15	May	15	Oct.	10	Oct.	25	"

OBSERVATIONS OF FRUIT TREES, ETC., AT WAUSEON, OHIO, IN 1887, BY THOS. MIKESELL.

Name.	Variety.	Buds began to open.	First fully formed leaf.	In full leaf.	In blossom.	Fruit ripe.	Complete change of foliage.	Divested of leaves.	Fruit plentiful or scant.
Apple.....	King.....	April 21	April 28	May 10	May 10	Sept. 30	Oct. 15	Nov. 5	Scant.
".....	Baldwin.....	April 25	May 6	May 11	May 11	Oct. 5	Oct. 15	Nov. 5	"
".....	Greening.....	April 28	May 7	May 12	May 11	Oct. 1	Oct. 15	Nov. 30	"
".....	Early Harvest.....	April 22	May 5	May 10	May 9	July 18	Sept. 30	Oct. 10	"
".....	Yellow Bellflower ..	April 25	May 6	May 12	May 7	Oct. 5	Oct. 10	Oct. 20	"
".....	Rambo	April 26	May 6	May 11	May 10	Oct. 1	Oct. 10	Oct. 30	"
".....	Sweet Bough	April 26	May 6	May 10	May 9	Aug. 5	Oct. 18	Nov. 15	Full.
".....	Talman Sweet... ..	April 28	May 10	May 19	May 15	Oct. 10	Oct. 5	Nov. 10	Scant.
".....	Hyslop Urab.....	April 20	April 30	April 8	May 7	Aug. 30	Sept. 30	Oct. 20	Full.
".....	Wild Crab.....	April 30	May 8	May 18	May 14	Oct. 1	Sept. 25	Oct. 5	"
Pear	Flemish Beauty.....	April 29	May 10	May 15	May 6	Aug. 25	Sept. 25	Sept. 30	"
".....	Bartlett	April 29	May 9	May 15	May 7	Aug. 23	Sept. 25	Oct. 5	"
".....	Winter Nellis.....	April 28	May 7	May 12	May 6	Sept. 25	Oct. 16	Oct. 25	"
Plum.....	Wild.....	April 30	May 5	May 16	April 30	Sept. 2	Oct. 16	Oct. 20	Scant.
".....	Wild Goose.	May 1	May 7	May 18	May 2	.....	Oct. 16	Oct. 25	"
Peach.....	Seedling	April 16	May 1	May 16	May 3	Sept. 20	Oct. 10	Oct. 30	Full.
Cherry	Early Richmond.....	April 27	May 4	May 12	May 3	June 14	Oct. 20	Oct. 28	Scant.
".....	Common Red.....	April 26	May 3	May 12	May 4	July 1	Oct. 26	Nov. 10	Full.
".....	Wild Black	April 11	April 25	May 8	May 20	Sept. 5	Sept. 30	Oct. 18	"
Currant	Red.....	April 12	May 1	May 10	May 3	July 9	Oct. 25	Nov. 10	"
".....	Wild Black.....	April 12	April 28	May 7	May 3	July 20	Oct. 20	Nov. 5	"

Gooseberry	Garden	April 7	April 25	May 5	May 4	July 4	Oct. 28	Nov. 10	Scant.
"	Wild	April 14	April 30	May 8	May 5	July 25	Oct. 17	Nov. 5	"
Raspberry	Red, Wild.	April 12	April 28	May 7	May 20	June 28	Oct. 26	Nov. 10	Full.
"	Red, Outhbert.	April 12	April 30	May 7	May 24	July 1	Oct. 26	Nov. 5	"
"	Black, Wild.	April 10	April 26	May 3	May 25	June 30	Oct. 26	Nov. 8	"
Blackberry	Black, Gregg.	April 12	May 1	May 10	May 26	July 4	Oct. 26	Nov. 5	"
Dewberry	Wild High.	April 25	May 10	May 16	May 22	July 23	Sept. 25	Oct. 20	Scant.
Grape.....	Wild	April 25	May 9	May 16	May 23	July 14	Oct. 16	Oct. 30	"
"	Wild Frost... ..	May 7	May 18	May 28	June 4	Sept. 10	Sept. 25	Sept. 30	Full.
Strawberry	Concord..... ..	May 7	May 17	May 28	June 9	Sept. 8	Sept. 25	Oct. 25	"
"	Wild .....	.....	.....	.....	May 3	June 6	.....	.....	"
"	Miner's Prolific.....	.....	.....	.....	May 8	June 11	.....	.....	"
"	Sharpless .....	.....	.....	.....	May 7	June 11	.....	.....	"

OBSERVATION OF FLOWERS AT WAUSEON, OHIO, IN 1887, BY THOMAS MIKESELL.

Common name.	Botanical name.	When in blossom.
Liverwort	Hepatica triloba	April 14
Spring Beauty	Claytonia Virginica.....	" 15
Bitter Cress	Cardamine rhomboidia	" 15
Blood Root.....	Sanguinaria Canadensis.....	" 30
Pepper Root.....	Dentaria diphylla.....	" 21
Wild Phlox.....	Phlox divarcata	May 1
Dandelion.....	Taraxacum dens-leonis.....	" 1
Dog-tooth Violet, yellow	Erythronium Americanum.....	April 24
" " white	" albidum	" 24
Selkirk's Violet.....	Viola Selkirkii	May 4
White "	" blanda	" 3
Yellow "	" rotundifolia	" 3
Lanced-leaved Violet	" lanceolata	" 8
Muhlenberg's "	" Muhlenbergii.....	" 4
Cream-colored "	" striata.....	" 4
Arrow-leaved "	" sagittata	" 3
Foot-leaved "	" pedata	" 6
Larkspur "	" delphinifolia	" 5
Woolly "	" villosa	" 4
Pansy	" tricolor.....	April 20
Sweet William.....	Dianthus barbatus.....	June 4
Carnation	" caryophyllus.....	" 20
Flowering Almond	Amygdalus nana	May 4
Lilac	Syringa vulgaris.....	" 11
Wild Columbine.....	Aquilegia Canadensis	" 16
Hollyhock.....	Althea rosea.....	June 25
Balsam	Impatiens balsamina.....	July 15
Lemon Lily	Lilium bulbiferum	May 25
Tiger "	" tigrinum	July 18
Wild "	" Canadense	" 5
Peony.....	Peonia albiflora, var. Humei.....	May 30
Morning Glory	Convolvulus major.....	July 8
Portulaca.....	Portulaca grandiflora.....	June 20
Petunia	Petunia hybrida.....	" 17
Tulip	Tulipa Gesneriana	May 11
Crocus	Crocus vernus	April 14

MISCELLANEOUS OBSERVATIONS AT WAUSEON, OHIO, IN 1887.

THOS. MIKESELL, OBSERVER.

Common name.	Date first seen.
Honey bees	March 7
Green flies	" 2
Wasps	" 7
Frogs	" 7
Snakes—Say's garter	" 24
Toads	April 10
Tree toads.....	" 21
Raccoon	Jan. 22
Woodchuck	" 23
Butterfly—Vanessa	March 16
" Cabbage	April 19
Bumble bee	" 21
Colorado potato beetle	" 14
Cicada	July 18
Five-spotted sphinx	June 27
Carpenter bee.....	May 4
June bug....	" 15
Katydid.....	July 6

OBSERVATIONS OF FIELD AND GARDEN CROPS AT WAUSEON, OHIO, IN 1887.

THOS. MIKESELL, OBSERVER.

Name.	Variety.	When planted.	Above ground.	In blossom.	Ready for use.	Ripe.	Per cent. of good crop.	Quality of crop.
Wheat.....	Fultz.....	Sept. 22, '86.....	Sept. 26.....	June 1.....	.....	June 28.....	40	Good.
".....	Democrat.....	Sept. 29, '86.....	Oct. 4.....	June 2.....	.....	July 2.....	60	"
Oats.....	White Canadian.....	April 9.....	April 21.....	June 25.....	.....	July 16.....	100	"
Corn.....	Pride of the North.....	May 28.....	June 3.....	July 19.....	Aug. 8.....	Sept. 8.....	70	Fair.
".....	Pa. State Premium.....	May 20.....	May 25.....	July 24.....	Aug. 15.....	Sept. 15.....	60	Good.
Potatoes, early.....	Early Vermont.....	April 26.....	May 11.....	June 18.....	June 30.....	July 25.....	100	Fair.
" late.....	" Rose.....	June 4.....	June 12.....	July 20.....	Aug. 6.....	Aug. 30.....	20	Good.
Beans, early.....	Golden Wax.....	April 28.....	May 11.....	June 9.....	June 24.....	July 22.....	100	Fair.
" late.....	Lima.....	May 21.....	May 7.....	July 7.....	.....	.....	00	Failure.
Peas, early.....	McLean's Little Gem.....	April 28.....	May 7.....	June 3.....	June 18.....	July 8.....	100	Good.
" late.....	Bliss's Everbearing.....	May 21.....	June 2.....	July 4.....	July 25.....	Aug. 10.....	40	"
Beets.....	Eclipse.....	April 28.....	May 7.....	.....	June 25.....	.....	40	"
Cabbage.....	Winnigstadt.....	April 30.....	May 7.....	.....	Sept. 15.....	.....	40	"
Radish.....	Early Strasburg.....	April 30.....	May 6.....	.....	May 13.....	.....	25	"
Tomato.....	Essex Hybrid.....	April 30.....	May 10.....	June 30.....	.....	Aug. 4.....	80	"
Sweet corn.....	Amber Cream.....	May 21.....	June 2.....	July 22.....	Aug. 10.....	Aug. 25.....	90	"
".....	Black Mexican.....	May 11.....	May 21.....	July 15.....	Aug. 4.....	Aug. 20.....	75	"
Cucumber.....	White Spine.....	May 21.....	May 28.....	July 5.....	July 16.....	Aug. 15.....	25	Poor.
Squash.....	Marblehead.....	June 4.....	June 12.....	.....	.....	.....	.....	Failure.
Clover.....	Medium Red.....	.....	.....	June 3.....	June 15.....	Aug. 20.....	90	Good.
Timothy.....	Phleum pratense.....	.....	.....	June 20.....	July 5.....	July 18.....	80	"

DATE OF BLOOMING OF PLANTS FOR 1887.

PREPARED BY MOSES CRAIG, OBSERVER, OHIO STATE UNIVERSITY.

This is a list of the first appearance in bloom of the plants named below. They all grew within two miles of the University. A plant is considered in bloom when the pollen is being shed.

Botanical name.	Common name.	Date.
Anemone Virginiana, L	Virginian Anemone	July 24
“ Pennsylvanica, L.....	Pennsylvanian Anemone	May 23
“ nemorosa, L., var. quinque- folia	Wood Anemone	April 8
Hepatica triloba, Chaix.....	Liverwort.....	Mar. 19
Thalictrum dioicum, L.....	Early Meadow Rue.....	April 17
Ranunculus abortivus, L.....	Small-flowered Crowfoot.....	“ 11
“ repens, L	Creeping Crowfoot	“ 20
“ acris, L	Butter-cups	“ 27
Isopyrum biternatum, T. & G.....	False Rue Anemone.....	“ 10
Caltha palustris, L.....	Marsh Marigold. Cowslip.....	“ 23
Aquilegia Canadensis, L.....	Columbine.....	May 15
Delphinium tricornis, Mx.....	Dwarf Larkspur.....	“ 9
“ consolida.....	Field Larkspur.....	June 19
Hydrastis Canadensis, L.....	Turmeric Root	May 4
Asimina triloba, Dunal	Papaw	“ 7
Menispermum Canadensis, L	Moon-seed	“ 29
Jeffersonia diphylla, Pers.....	Twin-leaf	April 21
Podophyllum peltatum, L	Mandrake	May 15
Chelidonium majus, L	Celandine	“ 30
Sanguinaria Canadensis, L.....	Blood Root	April 8
Dicentra cucullaria, D. C.....	Dutchman's Breeches	“ 13
“ Canadensis, D. C	Squirrel Corn	“ 13
Corydalis aurea, Willd	Golden Corydalis ..	“ 11
Nasturtium officinale, R. Br.....	English Water Cress	May 6
“ Armoraca, Fries	Horse Radish.....	June 5
Turritis glabra, L.....	Tower Mustard	May 3
Iodanthus pinnatifida, T. & G.....	False Rocket.....	“ 24
Dentaria laciniata, Muhl	Pepper-root. Toothwort.....	April 12
Cardamine rhomboidea, D. C.....	Spring Cress	“ 17
“ “ var. purpu- rea, Tor.....	Bitter Cress	“ 17
Barbarea vulgaris, L	Winter Cress. Yellow Rocket.....	May 30
Sisymbrium officinale, Scop.....	Hedge Mustard	June 10
Brassica Sinapistrum, Bois.....	Field Mustard	May 24
“ Nigra, Gray.....	Black Mustard	“ 7
Capsella Bursa-pastoris, Moench	Shepherd's Purse	April 20
Lepidium Virginicum, L.....	Wild Pepper Grass	June 1
“ Campestre, R. Br.....	Yellow Seed	May 6
Raphanus sativa, L	Garden Radish.....	June 9
Solea concolor, Ging.....	Green Violet.....	May 15
Viola blanda, Willd	Sweet White Violet	“ 28
“ cucullata, Ait.....	Common Blue Violet.....	April 14
“ striata, Ait	Pale Violet	“ 22
“ pubescens, Ait.....	Downey Yellow Violet	“ 17
Hypericum perforatum, L.....	Common St. Johns-wort	June 19
“ corymbosum, Muhl .....	.....	July 24

DATE OF BLOOMING OF PLANTS FOR 1887—Continued.

Botanical name.	Common name.	Date.
<i>Saponaria officinalis</i> , L.....	Soapwort. Bouncing Bet.....	June 29
<i>Silene Virginica</i> , L.....	Fire Pink. Catchfly.....	May 30
<i>Lynchnis Githago</i> , Lam.....	Corn Cockle.....	" 30
<i>Stellaria mediæ</i> , Smith.....	Chick-weed.....	April 8
" <i>longifolia</i> , Muhl.....	Long-leaved Stitch-wort..	May 8
<i>Portulaca oleracea</i> , L.....	Purslane.....	June 22
<i>Claytonia Virginica</i> , L.....	Spring Beauty.....	Mar. 19
<i>Malva rotundifolia</i> , L.....	Common or Low Mallow.....	May 20
<i>Sida spinosa</i> , L.....	Sida.....	July 24
<i>Tilia Americana</i> , L.....	Linden. Basswood.....	June 24
<i>Geranium maculatum</i> , L.....	Wild or Spotted Cranesbill.....	May 4
<i>Impatiens fulva</i> , Nutt.....	Spotted Touch-me-not.....	June 19
<i>Oxalis stricta</i>	Yellow Wood-sorrel.....	May 25
<i>Ptelea trifoliata</i> , L.....	Shrub Trefoil. Hop-tree.....	June 12
<i>Rhus Cotinus</i> , L.....	Venetian Sumac.....	May 21
" <i>Toxicodendron</i> , L.....	Poison Ivy. Poison Oak.....	" 27
" <i>aromatica</i> , Ait.....	Sweet or fragrant Sumac.....	April 17
<i>Vitis cordifolia</i> , Mx.....	Winter or Frost Grape.....	May 18
<i>Euonymus Americanus</i> , L., var. <i>obovatus</i> , F. & G.	Strawberry bush.....	" 22
<i>Staphylea trifolia</i> , L.....	American Bladder Nut.....	" 3
<i>Aesculus glabra</i> , Willd.....	Fetid or Ohio Buckeye.....	" 1
<i>Acer sacharinum</i> , Wang.....	Sugar or Rock Maple.....	April 20
" <i>dasycarpum</i> , Ehrh.....	White or Silver Maple.....	March 5
" <i>rubrum</i> , L.....	Red or Swamp Maple.....	" 20
<i>Negundo aceroides</i> , Moench.....	Ash-leaved Maple Box-elder.....	April 25
<i>Trifolium hybridum</i>	Alsike.....	June 11
" <i>pratense</i> , L.....	Red Clover.....	May 15
" <i>stoloniferum</i> , Muhl.....	Running Buffalo Clover.....	" 27
" <i>repens</i> , L.....	White Clover.....	" 15
" <i>procumbens</i> , L.....	Low-hop Clover.....	" 30
<i>Melilotus officinalis</i> , L.....	Yellow Melilot.....	June 11
" <i>alba</i> , Lam.....	White Melilot, Sweet Clover.....	" 21
<i>Medicago lupulina</i> , L.....	Black Medick. None-such.....	May 25
<i>Amorpha fruticosa</i> , L.....	Lead Plant.....	" 20
<i>Colutea arborescens</i> , L.....	Bladder Senna.....	" 20
<i>Wistaria Chinensis</i>	Chinese Wistaria..	" 21
<i>Robinia pseudacacia</i> , L.....	Locust Flare. Acacia.....	" 17
<i>Desmodium Canadense</i> , D. C.....	Bush or Tick-Trefoil.....	July 30
<i>Cercis Canadensis</i> , L.....	Red-bud. Judas-tree.....	April 24
<i>Gleditschia triacanthus</i> , L.....	Honey Locust.....	May 30
<i>Prunus vulgaris</i> , Mill.....	Sour Cherry. Morello.....	April 27
" <i>Virginiana</i> , L.....	Choke-Cherry.....	May 4
" <i>domestica</i> , L.....	Damson Plum. Com. Garden Plum	April 25
<i>Persica vulgaris</i> , Mill.....	Peach.....	" 15
<i>Agrimonia Eupatoria</i> , L.....	Common Agrimony.....	July 24
<i>Geum album</i> , Gmel.....	White Avens.....	June 15
<i>Potentilla Norvegica</i> , L.....	Cinque-foil.....	" 12
<i>Potentilla recta</i> , Willd.....	Cinque-foil.....	" 8
" <i>Canadensis</i> , L.....	Common Five-finger.....	May 8
<i>Rubus Odorus</i> , L.....	Garden Raspberry.....	" 17
" <i>occidentalis</i> , L.....	Black.....	" 30
" <i>villosus</i> , L.....	High Blackberry.....	" 15
" <i>cuneifolius</i> , Ph.....	Sand.....	" 27
<i>Rosa rubiginosa</i> , L.....	Eglantine or Sweet Brier.....	" 23
<i>Crataegus tomentosa</i> , L.....	Black Thorn.....	" 11
<i>Pyrus Aucuporia</i> , L.....	English Mountain Ash.....	" 12
" <i>communis</i> , L.....	Pear tree.....	April 24
" <i>Malus</i> , L.....	Common Apple tree.....	" 24

DATE OF BLOOMING OF PLANTS FOR 1887—Continued.

Botanical name.	Common name.	Date.
<i>Amelanchier Canadensis</i> , T. & G.....	Shad-flower. Wild Service.....	April 25
<i>Cydonia vulgaris</i> , Pers.....	Common Quince	May 4
“ <i>Japonica</i> , Pers.....	Japan Quince	April 18
<i>Ribes Cynosbati</i> , L.	Prickly Gooseberry	May 15
<i>Philadelphus grandiflorus</i> , Willd.....	Mock Orange. Syringa	“ 22
<i>Mitella diphylla</i> , L.....	Mitre-wort. Bishop's cap.....	“ 20
<i>Sedum ternatum</i> , Mx.....	Stone-crop. Orpine.....	“ 9
<i>Hamamelis Virginica</i> , L.....	Witch Hazel.....	Oct. 4
<i>Epilobium angustifolium</i> , L.	Great Willow herb.....	Aug. 21
“ <i>coloratum</i> , Muhl.....	Willow herb. Rose Bay.....	July 30
<i>Oenothera biennis</i> , L.....	Evening Primrose.....	June 19
<i>Daucus carota</i> , L.....	Wild Carrot.....	July 24
<i>Heracleum lanatum</i> , Mx.	Cow-parsnip	May 22
<i>Pastinaca sativa</i> , L.....	Common Parsnip.....	“ 19
<i>Zizia integrerrima</i> , D. C.....	Golden Alexanders.....	“ 8
<i>Cicuta Maculata</i> , L.....	Water Hemlock. Spotted Cowbane	June 12
<i>Osmorhiza brevistylis</i> , D. C.....	Hairy Sweet Cicely.....	May 30
<i>Erigenia bulbosa</i> , Nutt.....	Harbinger-of-spring. Pepper and salt	Mar. 27
<i>Aralia racemosa</i> , L.....	Spikenard	June 12
<i>Cornus florida</i> , L.....	Flowering Dogwood.....	May 3
<i>Lonicera Tartarica</i>	Tartarian Honeysuckle	“ 4
<i>Diervilla Japonica</i> , Var. <i>rosea</i>	Japan bush Honeysuckle.....	“ 4
<i>Triosteum perfoliatum</i> , L.....	Feverwort	“ 18
<i>Sambucus Canadensis</i> , L.....	Common Elder.....	June 10
<i>Viburnum prunifolium</i> , L.....	Black Haw.....	May 8
“ <i>Opulus</i> , L.....	Cranberry tree. Snow-ball.....	“ 8
<i>Galium Aparine</i> , L.....	Goose-grass	“ 5
“ <i>asprellum</i> , Mx.....	Rough Bedstraw	June 12
<i>Valeriana paniciflora</i> , Mx	Valerian	May 30
<i>Fedia umbilicata</i> , Sull.....	Corn Salad	“ 5
<i>Dipsacus sylvestris</i> , Mill.....	Wild Teasel.....	July 24
<i>Vernonia noveboracensis</i> , Willd.....	Ironweed.....	“ 24
<i>Eupatorium purpureum</i> , L.....	Joe-pye-weed.....	“ 24
“ <i>perfoliatum</i> , L.....	Boneset	“ 22
“ <i>ageratoides</i> , L	White Snakeroot.....	“ 27
<i>Seriocarpus conyzoides</i> , Nees.....	White-topped Aster.....	Sept. 1
<i>Aster acuminatus</i> , Mx.....	White-scaled Aster.....	July 10
<i>Erigeron bellidifolium</i> , Muhl.....	Robin's Plantain	May 8
“ <i>annuum</i> , Pers.....	Sweet Scabious.....	June 8
“ <i>strigosum</i> , Muhl.....	Daisy Fleabane	“ 8
“ <i>Philadelphicum</i> , L.....	Common Fleabane	“ 5
<i>Solidago latifolia</i> , L.....	Broad-leaved Golden-rod	Aug. 30
“ <i>caesia</i> , L.....	Golden-rod	“ 27
<i>Silphium perfoliatum</i> , L	Cup plant	July 30
<i>Ambrosia trifida</i> , L.....	Horseweed	“ 24
“ <i>artemisiæfolia</i> , L.....	Ragweed	Aug. 12
<i>Xanthium strumarium</i> , L.	Cocklebur clothbur.....	“ 27
<i>Rudbeckia hirta</i> , L.....	Western Daisy	June 12
<i>Bidens chrysanthemoides</i> , Mx.....	Largebur Marigold.....	July 17
“ <i>bipinnata</i> , L.....	Spanish needles.....	Aug. 21
<i>Maruta cotula</i> , D. C.....	Mayweed	May 30
<i>Achillea Millefolium</i> , L.....	Yarrow, or Milfoil.....	“ 30
<i>Tanacetum vulgare</i> , L.....	Tansy	July 10
<i>Leucanthemum vulgare</i> , Lam.....	Ox-eye, or White Daisy	“ 10
<i>Antennaria plantaginifolia</i> , Br.....	Plantain-leaved Everlasting.....	April 20
<i>Senecio aureus</i> , L.....	Golden Ragwort.. ..	“ 25
<i>Cirsium lanceolatum</i> , Scop.....	Common Thistle	July 10
<i>Lappa major</i> , L.....	Burdock	“ 21
<i>Tragopogon porrifolius</i> , L.....	Vegetable Oyster.....	May 27

DATE OF BLOOMING OF PLANTS FOR 1887—Continued.

Botanical name.	Common name.	Date.
<i>Taraxacum Dens-leonis</i> , Desf.	Dandelion	April 11
<i>Lactuca Canadensis</i> , L.....	Wild Lettuce	July 8
<i>Sonchus asper</i> , Vill....	Sow-thistle.....	June 19
<i>Lobelia syphilitica</i> , L.....	Blue Cardinal Flower.....	Aug. 12
<i>Campanula Americana</i> , L.....	Tall Bell Flower	" 10
<i>Plantago major</i> , L	Common Plantain	June 17
" <i>lanceolata</i> , L.....	Ribgrass. English Plantain'...	May 8
" <i>aristata</i> , Mx.....	Bearded Plantain	July 5
<i>Lysimachia ciliata</i> , L.....	Loosestrife.....	June 19
<i>Catalpa bignonioides</i> , Walt.....	Indian Bean	" 15
<i>Epiphegus Virginiana</i> , Bart.....	Beech drops	Oct. 2
<i>Verbascum thapsus</i> , L.....	Common Mullen.....	June 27
" <i>blattaria</i> , L.....	Moth "	" 20
<i>Collinsia verna</i> , Nutt ..	Innocence	April 28
<i>Chelone glabra</i> , L	Snake-head	Sept. 2
<i>Penstemon pubescens</i> , Sol.....	Beard-tongue	May 30
<i>Mimulus ringens</i> , L	Monkey Flower.....	July 30
<i>Veronica Americana</i>	American Brooklime.....	" 18
" <i>serpyllifolia</i> , L.....	Thyme-leaved Speedwell	" 10
" <i>peregrina</i> , L.....	Neckweed	May 7
" <i>arvensis</i> , L.....	Field Speedwell.....	" 10
<i>Gerardia tenuifolia</i> , Vahl.....	Slender Gerardia	Aug. 28
<i>Hedeoma pulegioides</i> , Pers.....	American Pennyroyal.....	July 24
<i>Monarda fistulosa</i> , L	Wild Bergamont	" 9
<i>Lophanthus nepetoides</i> , Benth.....	Giant Hyssop	Aug. 21
<i>Nepeta Cataria</i> , L	Catmint. Catnip.....	June 29
" <i>Glechoma</i> , Benth	Ground Ivy	April 11
<i>Prunella, vulgaris</i>	Self-heal. Heal-all.....	June 18
<i>Scutellaria galericulata</i> , L.....	Skullcap	" 13
<i>Stachys palustris</i> , L.....	Hedge Nettle	July 10
<i>Leonurus Cardiaca</i> , L.....	Motherwort.....	May 29
<i>Lamium amplexicaule</i> , L.....	Dead Nettle	April 15
<i>Ruellia strepens</i> , L .....	.....	June 19
<i>Verbena hastata</i> , L.....	Blue Vervain	" 25
" <i>urticifolia</i> , L.....	White Vervain.....	July 30
<i>Lipa lanceolata</i> , Mx	Fog-fruit.....	" 5
<i>Phyrma Leptostachya</i> , L.....	Lop-seed	" 24
<i>Lithospermum arvense</i> , L.....	Wheat-thief	April 15
<i>Mertensia Virginica</i> , D. C.....	Lungwort.....	" 17
<i>Cynoglossum officinale</i> , L.....	Hounds' Tongue	May 15
<i>Hydrophyllum macrophyllum</i> , Nutt..	Water-leaf	" 26
" <i>Virginicum</i> , L.....	Virginia Burr-flower	" 14
<i>Cosmanthus Purchii</i> , Buckley.....	Miami Mist.....	" 8
<i>Polemonium reptans</i> , L.....	Greek Valerian	April 23
<i>Phlox maculata</i> , L.....	Wild Sweet William	July 24
" <i>divaricata</i> , L.....	Wild Pink	April 14
<i>Convolvulus arvensis</i> , S.....	Bindweed	June 15
<i>Solanum tuberosum</i> , L.....	Common Potato.....	" 10
" <i>Dulcamaria</i> , L.....	Bittersweet	May 22
" <i>Nigrum</i> , L	Black Nightshade	June 10
<i>Datura stramonium</i> , L.....	Jimson-weed	" 15
<i>Apocynum androsaemifolium</i> , L	Spreading Dog's-bane.....	May 30
" <i>cannabinum</i> , L	Indian Hemp.....	" 17
<i>Asclepias Cornuti</i> , Decs.....	Common Milkweed	June 19
" <i>quadrifolia</i> , Jacq	Four-leaved Milkweed	" 1
" <i>incarnata</i> , L.....	Swamp Milkweed ..	" 25
<i>Fraxinus Americana</i> , L.....	White Ash	April 17
" <i>quadrangulata</i> , Lam.....	Blue Ash	" 17
<i>Syringa vulgaris</i> , L.....	Common Lilac	May 3
" <i>Persica</i> , L.....	Persian Lilac.....	" 4

DATE OF BLOOMING OF PLANTS FOR 1887—Concluded.

Botanical name.	Common name.	Date.
<i>Asarum Canadense</i> , L	Wild Ginger	May 8
<i>Phytolacca decandra</i> , L.....	Poke. Gargotweed	June 16
<i>Chenopodium album</i> , L.....	Pigweed. Lamb's Quarters.....	July 28
<i>Amarantus albus</i> , L	Amaranth	Aug. 12
“ <i>retroflexus</i> , var. <i>hybridus</i>	Amaranth	Sept. 1
<i>Polygonum dumetorum</i> , L.....	Climbing False Buckwheat	June 12
<i>Rumex maritimus</i> , L.....	Golden Dock.....	May 30
“ <i>verticillatus</i> , L.....	Swamp Dock.....	“ 30
“ <i>crispus</i> , L.....	Yellow, or Curled Dock	“ 25
“ <i>Acetosella</i> , L.....	Sheep Sorrel	“ 7
<i>Sassafras officinale</i> , Nees.....	Sassafras.....	“ 20
<i>Euphorbia maculata</i> , L.....	Spotted Spurge	July 3
“ <i>hypercifolia</i> , L.....	Spurge.....	“ 1
<i>Ulmus Americana</i> , L.....	American, or White Elm	May 12
<i>Morus rubra</i> , L.....	Red Mulberry.....	“ 22
<i>Urtica urens</i> , L.....	Dwarf Nettle.....	Aug. 15
<i>Maclura aurantiaca</i> , Nutt	Osage Orange	May 30
<i>Juglans cinerea</i> , L.....	Butternut	“ 15
“ <i>nigra</i> , L.....	Black Walnut.....	“ 15
<i>Carya alba</i> , Nut.....	Shellbark Hickory	“ 12
<i>Ostrya Virginica</i> , Willd.....	American Hop Hornbeam.....	“ 1
<i>Salix nigra</i> , Marshall	Black Willow	April 11
<i>Arisæma triphyllum</i> , Tor.....	Indian Turnip	“ 30
“ <i>Dracontium</i> , Schott	Dragon-Root	May 24
<i>Symplocarpus foetidus</i> , Salisb	Skunk Cabbage	April 23
<i>Typha latifolia</i> , L.....	Cat-tail. Reedmace.....	June 19
<i>Sparganium ramosum</i> , Huds.....	Burr Reed.....	May 15
<i>Alisma plantago</i> , L.....	White Plantain	July 29
<i>Sagittaria variabilis</i> , Eng.....	Arrow Head	June 16
<i>Orchis spectabilis</i> , L.....	Showy Orchis.....	May 10
<i>Iris versicolor</i> , L.....	Large Blueflag	“ 23
<i>Discorea villosa</i> , L.....	Wild Yamroot	July 10
<i>Smilax rotundifolia</i> , L.	Common Greenbrier	May 30
“ <i>pedicularis</i> , Muhl.....	Tall Carrion Flower.....	“ 30
<i>Trillium sessile</i> , L.....	Wake Robin.....	April 13
“ <i>grandiflorum</i> , Salisb.....	Large White Trillium	“ 17
<i>Yucca filamentosa</i> , L.....	Bear's Thread	July 4
<i>Uvularia perfoliata</i> , L.....	Mealy Bell-wort	April 25
<i>Smilicena racemosa</i> , L.....	Clustered Solomon's Seal.....	May 13
<i>Erythronium albidum</i> , Nutt	White Dogs-tooth Violet	April 15
“ <i>Americanum</i> , Smith.....	Yellow Adder's Tongue	“ 10
<i>Scilla Fraseri</i> , Gray.....	Wild Hyacinth.....	May 13
<i>Tradescantia Virginica</i> , L.....	Common Spiderwort	“ 15
<i>Carex Pennsylvania</i>	Sedge.	April 17
<i>Phleum pratense</i> , L.....	Timothy. Herd's Grass.....	June 11
<i>Dactylis glomerata</i> , L	Orchard Grass	May 24
<i>Poa pratensis</i> , L	Common Meadow Grass.....	“ 24
<i>Eragrostis poaeoides</i> , Beauv.....	Stinking Eragrostis	July 20
<i>Secale Cereale</i> , L.....	Rye	May 22
<i>Equisetum arvense</i> , L.....	Field Horsetail.....	April 30

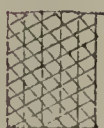
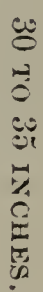
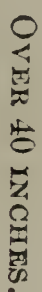
MONTHLY AND ANNUAL MEAN TEMPERATURES, IN DEGREES FAHR., AT PORTSMOUTH,
SCIOTO COUNTY, O., FROM OBSERVATIONS FURNISHED BY D. B. COTTON, M. D.

Years.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Annual.
1830	34.6	37.9	49.0	59.5	62.4	70.8	77.0	76.0	68.5	60.9	50.7	36.9	57.0
1831	24.4	32.2	47.2	55.6	61.1	71.6	73.2	71.3	64.3	57.1	42.6	22.9	52.0
1832	31.8	41.7	45.4	54.6	62.5	69.2	72.4	68.7	62.0	56.2	45.7	38.0	54.0
1833	38.5	39.6	43.6	57.9	68.3	70.1	75.8	69.6	68.5	51.8	43.9	39.0	55.6
1834	34.8	46.2	48.7	58.1	63.2	74.1	79.1	77.3	65.4	54.5	46.0	39.3	57.2
1835	36.9	27.6	42.4	52.9	66.0	72.1	74.1	71.9	62.6	58.6	48.4	38.2	54.3
1836	35.6	34.3	40.5	56.9	67.8	70.8	74.9	72.7	70.8	52.1	42.1	36.4	54.6
1837	34.8	41.0	45.4	50.2	63.5	69.7	75.8	73.6	66.8	57.3	50.2	40.3	55.7
1838	40.6	26.5	46.8	51.2	56.8	73.6	78.8	78.2	66.1	50.2	39.1	29.3	53.1
1839	37.9	37.2	44.8	58.8	67.8	70.3	76.7	73.4	62.7	60.5	39.0	33.1	55.2
1840	28.3	43.2	48.3	59.0	64.7	72.1	75.0	74.9	62.7	55.8	42.4	34.1	55.0
1841	32.7	34.3	45.1	52.9	62.5	76.6	77.7	74.5	69.3	52.0	45.9	38.4	55.2
1842	41.4	40.8	56.3	61.7	63.4	68.0	74.7	71.4	69.5	59.0	40.0	38.9	57.1
1843	41.4	31.2	33.0	55.0	63.6	72.0	77.2	73.8	72.9	52.7	44.9	38.7	54.7
1844	34.3	39.5	47.6	66.1	69.2	73.5	80.1	75.0	69.0	54.8	48.2	39.1	58.0
1845	42.0	43.5	48.2	64.0	64.4	74.6	78.9	77.7	68.8	55.0	45.1	29.8	57.7
1846	39.3	37.3	48.4	60.5	68.4	71.4	76.3	78.0	73.7	56.1	50.2	44.2	58.6
1847	37.4	41.5	45.1	59.9	65.2	71.3	76.0	73.2	67.2	56.1	48.2	39.8	56.7
1848	41.6	39.8	46.4	57.1	68.7	72.4	74.8	74.4	64.0	56.5	44.3	46.5	57.2
1849	34.5	34.3	50.6	55.9	66.5	77.7	76.4	76.4	69.1	55.8	51.9	36.5	57.1
1850	39.4	39.3	42.9	53.3	61.5	75.2	81.8	78.4	69.3	56.1	42.6	38.7	56.6
1851	38.6	47.2	49.5	56.4	68.1	73.2	79.0	76.4	72.1	56.7	44.7	32.6	57.9
1852	29.7	41.0	49.3	53.2	67.8	71.6	79.1	74.4	68.7	62.6	45.0	43.0	57.1
1853	37.6	38.8	45.7	56.4	65.8	79.2	77.9	76.7	70.1	53.1	50.2	35.6	57.3
1854	34.7	42.5	48.3	55.3	68.1	75.3	83.0	81.3	77.9	62.7	44.9	38.1	59.3
1855	37.0	29.0	41.2	60.1	66.4	70.7	79.2	76.2	74.2	56.0	52.1	44.1	57.2
1856 .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	31.3	.....
1857	22.2	46.6	42.5	46.6	60.3	71.0	74.3	74.6	70.6	53.9	40.9	43.3	53.9
1858	44.5	30.7	44.5	58.1	64.4	74.5	77.6	76.4	68.2	61.9	44.0	44.5	57.4
1859	32.9	40.1	51.0	53.7	69.3	72.1	78.3	73.4	66.8	52.6	46.6	31.1	55.7
1860	36.9	37.7	46.8	57.9	69.0	71.0	77.3	73.7	65.3	57.8	42.0	33.2	55.7
1861	35.2	40.5	44.8	56.4	61.4	73.7	71.7	74.3	64.8	55.4	43.5	37.4	54.9
1862	37.1	36.5	43.5	54.9	66.0	71.2	78.2	77.6	71.4	57.4	44.8	40.5	56.6
1863	39.5	40.4	42.0	54.0	72.3	69.7	75.7	74.3	63.9	52.9	45.8	39.9	55.7
1864	32.9	38.3	42.7	52.3	63.8	69.6	71.2	75.8	67.8	51.5	47.3	36.9	54.8
1865	29.7	38.6	49.1	57.7	62.6	73.2	73.5	70.6	71.2	53.9	43.2	39.0	55.2
1866	33.0	34.2	43.0	59.9	60.8	71.9	77.2	67.2	65.5	56.6	44.2	31.6	53.8
1867	24.7	40.7	39.1	57.1	59.7	75.5	76.8	73.8	70.6	55.5	45.9	35.5	54.6
1868	29.4	33.9	50.0	52.0	61.5	68.2	79.9	72.0	63.8	54.5	43.6	31.7	53.6
1869	38.3	38.9	40.1	52.5	61.4	68.8	74.2	75.1	66.5	47.3	39.9	37.1	53.3
1870	37.5	35.4	39.6	53.7	66.9	72.1	77.1	75.0	69.5	58.1	45.4	28.3	54.9
1871	37.7	38.7	51.7	60.3	65.6	75.2	75.2	76.5	65.0	52.2	35.8	32.0	55.5
1872	30.5	32.3	37.2	57.5	66.6	72.8	77.6	76.2	66.1	53.2	40.9	26.2	53.1
1873	30.2	34.4	39.8	52.6	65.3	75.0	76.6	72.9	68.5	51.6	43.4	43.4	54.5
1874	39.2	41.3	46.8	52.0	68.4	73.2	77.7	75.2	71.0	57.1	45.8	41.6	57.9
1875	29.2	31.4	45.2	53.6	66.8	74.5	78.9	74.5	66.8	54.2	46.6	48.4	55.8
1876	44.6	40.7	45.9	57.7	68.8	76.0	79.3	77.8	68.2	50.7	43.0	26.2	56.6
1877	33.4	42.5	42.9	58.2	63.8	74.3	78.8	76.1	68.9	60.0	47.4	47.4	57.8
1878	37.4	40.8	52.9	53.6	65.0	71.1	82.9	78.8	65.0	56.7	46.9	31.1	56.8
1879	32.3	37.1	48.0	56.3	69.3	74.7	81.6	73.8	64.9	63.9	48.7	44.6	57.9
1880	50.1	43.6	46.8	58.8	71.6	75.5	76.8	76.6	66.6	55.4	39.8	30.7	57.7
1881	31.6	34.4	40.0	50.8	67.1	71.0	77.5	75.2	73.9	60.9	44.8	41.1	55.7
1882	34.8	42.6	47.4	51.6	59.9	69.0	74.8	71.2	66.1	58.6	43.1	33.3	54.4
1883	30.4	38.7	38.3	55.0	61.1	69.7	73.2	69.8	64.6	57.5	46.6	36.4	53.4
1884	23.3	40.9	42.5	51.6	62.0	71.1	72.2	71.5	69.3	58.1	42.4	33.9	53.2
1885	29.2	26.1	35.6	52.6	62.0	69.0	75.3	71.8	63.6	51.5	41.7	35.8	51.1
1886	27.7	32.3	42.6	55.3	64.5	68.8	72.8	71.8	66.9	53.5	42.5	30.4	52.4
1887	33.0	42.0	42.3	52.5	67.8	71.4	78.0	72.2	65.2	51.6	42.5	35.6	54.5
Mean	35.1	37.9	45.0	57.5	65.1	72.5	76.9	74.4	67.8	55.7	44.7	36.2	55.7

RAINFALL, IN INCHES AND HUNDREDTHS, AT PORTSMOUTH, SCIOTO COUNTY, OHIO,
FROM OBSERVATIONS FURNISHED BY D. B. COTTON, M. D.

Year.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Annual.
1830	1.10	1.40	6 00	1.10	2.50	3.80	0.30	0.90	2.90	0.10	4.10	0.10	24.30
1831	0.30	1.80	3.90	1.00	3.30	6.60	9.40	4.70	2.70	3.40	0.40	1.90	39.40
1832	3.00	4.00	1.80	5.80	2.20	2.30	4.50	7.30	3.30	3.20	2.00	6.20	45.60
1833	2.65	3.20	2.05	1.40	3.10	7.00	3.10	0.30	3.16	3.10	2.80	3.55	35.35
1834	6.70	1.60	2.60	2.20	1.20	4.10	1.40	1.05	1.40	3.70	4.30	3.20	33.45
1835	2.50	1.50	1.90	3.00	2.90	2.60	2.90	2.60	2.80	3.60	6.10	2.10	34.50
1836	1.30	3.15	4.20	3.10	6 80	2.70	3.10	6.00	3 80	2.00	2.20	2.20	40.55
1837	0.96	3.65	2.50	1.10	4.70	8.60	8 20	3.90	5.90	4.80	1.70	3.28	49.29
1838	1.50	3.20	3.20	4.50	5.10	5.12	5.00	1.80	1.10	3 50	3.10	1.60	38.72
1839	2.20	1.90	2.60	2.22	3.12	3.00	0.60	1.10	4.91	0.30	2.90	0.97	25.82
1840	2.02	2.75	2.34	5.50	6.40	10.66	1.35	3.15	2.20	3.30	0.30	2.12	42.09
1841	5.04	1.70	3.52	5.62	6.30	2 42	4.00	2.70	2.52	5.20	5.50	3.42	47.94
1842	4.30	3.04	2.94	4.20	6.02	8.20	3.14	2.21	0.90	1.20	3 85	2.32	42.32
1843	3.54	1.22	3.47	6.00	4.04	6.38	6.70	2.85	5.07	4.74	5.20	2 37	51.58
1844	2.92	0.20	2.57	1.64	5.21	4.00	4.60	4.00	2.80	3 00	2.60	0.64	34.18
1845	1.94	1.60	2.24	1.30	5.10	5.85	2.92	5.30	3.80	3.00	3.80	3.20	40.05
1846	3.25	1.51	4.25	4.31	5.06	3.81	3.25	5.44	2.00	0.69	6.38	5.44	45.39
1847	2 85	2.62	5.55	1.12	3.12	3.06	4.19	2.06	4.94	6.19	1.50	11.10	48.30
1848	3.91	2.38	2.75	0.25	6.81	3 25	6.94	5.06	0.25	2.56	1 50	5.48	41.14
1849	4.38	3.76	5.38	1.44	2.00	3.50	8.75	2.50	0.50	4.25	1.75	5.05	43.26
1850	8.22	3.56	8.06	3.69	3.81	3.62	4 00	8.00	0.75	2 62	2.75	8.12	57.20
1851	0.50	6.70	1.50	1.69	3.75	2.50	3.00	2.12	[2.75]	1.31	2.15	3.00	[30.97]
1852	2.00	4.12	3.75	5.56	2.44	6.19	1.12	2.88	1.88	1.56	2.62	5.50	39.62
1853	1.32	4.08	1.50	5.19	1.00	2.00	1.50	1 88	3.00	5.12	1.75	0.40	28.74
1854	7.25	2.69	4.75	2.00	0.25	1.00	2.00	1.50	0.56	3.56	3.19	2.58	31.33
1855	0.75	0.20	3.00	1.25	2.94	7.31	4.94	7.44	4.56	9.81	2.81	[3.50]	[45.51]
1856 .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.80	.....
1857	0.95	0.75	.....	0.15	1.00	2.12	3.62	1 00	0.25	2.00	.....	.....	.....
1858 .....	.....	0.35	0.20	.....	.....	5.75	2.69	2.44	0.44	1.81	1.64	5.75	.....
1859	2.33	7.20	3.09	8.34	1.43	4.21	1.22	6.70	1 29	2.32	2.09	6.15	46.37
1860	3.94	1.05	1.01	4.24	3.59	1.90	3.96	2.57	3.18	1.58	4.64	2.25	33.91
1861	3.10	2.60	1.81	5.35	5.99	2.15	1.40	5.45	3.19	3.40	5.86	1.64	41.94
1862	7.41	4.48	4.98	6.15	1.56	3.34	1.81	2.50	1.16	1.50	2.26	2.80	39.95
1863	6.42	3.48	4.43	2.02	1.37	1 76	4.32	4.15	1.52	3.16	2.14	2.24	37.01
1864	2.32	1.45	2.69	2.26	3.29	2.94	1.00	4.11	2.35	3.05	5.62	4.69	35.77
1865	2.65	3.55	5.90	3.95	10.59	4.30	6.17	2 00	6.03	1.15	1.15	6.53	53.97
1866	4.61	3.02	3.69	2.82	1.33	2.93	4.72	2.82	9.29	3.41	4.82	1.51	44.97
1867	3.23	5.96	7.11	1.37	4.64	1.46	4.34	4.32	0.72	5.57	2.10	4.47	45.29
1868 ..	1.81	0.95	3.83	4.71	6.26	4.40	2.97	4.45	9.00	1.64	1.85	3.20	45 07
1869	2 82	2.52	4.57	4.22	3.86	4.70	4.20	2.21	3.48	2.28	3.82	3.16	41.84
1870	4.92	3.68	3.87	3.48	1.34	3.17	7.54	4.95	0.75	2.99	2.18	2.04	40.91
1871	2.57	3.96	2.50	2.69	1.80	2.59	3.66	2.26	1.32	2.59	2.02	2.70	30.66
1872	0.78	2.25	1.14	8.37	3.08	1.89	6.10	1.81	1.32	1.20	1.18	2.01	31.13
1873	1.60	4.87	3.01	1.97	4.75	3.48	7.12	4.98	2.58	4.95	1.94	4.94	46.19
1874	4.63	3.71	2.62	5.38	1.18	3.46	6.22	1.94	2.50	0.24	3.64	2.80	38.32
1875	2.12	1.52	5.36	1.99	3.50	5 81	8.76	3.28	1.73	2.26	5.06	4.33	45.72
1876	4.25	2.47	4.45	2.53	1.00	3.69	6.75	3.54	5.60	1.82	3.67	1.45	41.22
1877	5 16	0.36	5.16	2.59	1.97	3.60	5.11	1.39	2.20	1.79	2.44	3.24	35.01
1878	2.96	1.36	3.90	1.37	1.96	2.39	1.42	2.92	2.73	2.06	3.16	3.66	29.89
1879	3.19	2.73	3.29	0.42	3.14	4.31	1.25	4.79	2.41	1.49	1 53	7.01	35.56
1880	4.05	5.80	4.56	5.94	2.03	4.65	2.85	5.54	3.99	2.90	3.05	3.62	48.98
1881	4.32	2.41	3.82	3.23	1.76	3.60	3.80	2.06	2.45	4.47	3.70	5.17	40.79
1882	8.82	6.28	4.19	3.09	8.49	6.85	3.44	6.69	3.66	1.72	1.30	1.68	56.21
1883	3.54	8.03	3.40	4.50	3.59	4.15	4.13	0.82	1.46	6.47	3.08	5.36	48.53
1884	5.34	6.11	5.55	3.90	4.90	3.47	2.45	1.35	1.87	1.22	1.46	4.70	42.32
1885	6.41	2.41	1.02	4.04	3.72	2.39	2.12	5.52	2.40	3.70	1.71	1.85	37.29
1886	3.70	1.82	3.88	3.28	5.22	6.75	3.82	3.98	3.99	1.25	5.22	2.42	45.33
1887	2.84	9.28	1.94	6.01	1.76	3.46	4.12	1.75	2.09	0.72	2.47	4.24	40.68
Mean	3.38	3.05	3.49	3.33	3.56	4.06	3.93	3.39	2.76	2.85	2.93	3.50	40.23

SCALE OF SHADES.



VOL. II.—PART 2.

TWELFTH ANNUAL REPORT

OF THE

State Inspector of Mines,

TO THE

GOVERNOR OF THE STATE OF OHIO,

FOR THE YEAR 1887.

OFFICE OF CHIEF INSPECTOR OF MINES,
COLUMBUS, OHIO, *November 15, 1887.*

HON. J. B. FORAKER, *Governor of Ohio:*

SIR: I have the honor herewith to present you the Thirteenth Annual Report of this department.

Very Respectfully,

THOS. B. BANCROFT,
Chief Inspector of Mines.

ANNUAL REPORT.

To His Excellency, JOSEPH B. FORAKER, Governor of Ohio:

In accordance with the provisions of the Revised Statutes, I have the honor to present you, herewith, the Thirteenth Annual Report of this department.

The year ending November 15, 1887, has been an exceptional one in the coal trade of Ohio. The operation of the inter-state commerce law has proven to be rather beneficial than otherwise to the operators in the matter of freight. The business has been a reasonably profitable one throughout and, as a consequence, the men have enjoyed steadier work than is usually the case, and the price of mining has been advanced. With the profit to the operator and advanced prices to the miner, an harmonious condition of affairs necessarily ensues, and I have to record but one strike of any length during the year, that upon the Baltimore and Ohio railroad, hereafter referred to.

As will be seen by reference to the statistical portion of this report, the output of the state is in excess of last year 1,866,497 tons. In this is included the pea coal and slack sold and shipped during the year, and which was not taken into consideration in last year's report of product. This amounts to 1,057,658 tons, which, deducted from the total product of the year, would still leave an increased output on the basis of my last year's report of 808,839 tons. The demand for pea and slack in the past has gradually grown, and the shipment of these sizes had assumed such proportions in 1886 that it was deemed advisable to include them in future reports, in order that a full and accurate statement of the tonnage of the state might be made. The output for the year is phenomenal, and, when considered in connection with the introduction of natural gas as a fuel, in 1885, it will be observed that our product has regularly *increased* since this competitor entered the field against coal. The same may be said of the bituminous product of western Pennsylvania, which in 1886 increased 3,565,030 tons over that of 1885. This product, in both states, came directly in competition with gas fuel, yet its influence upon the coal trade has not been such as to justify the predictions of most of the prophets that lifted their voices a year ago. The relief came in the shape of new markets in the Northwest, that have

taken all Ohio's surplus and are still increasing in their demands ; and it is a noticeable fact that the coals of this state are able to hold their own and compete successfully with those of states much nearer these markets. This is conspicuously shown in the large amount of Ohio coal sold on the Chicago market, where it comes in direct competition with the nearer coals of Illinois and Indiana.*

During the year Ohio coal has penetrated into Wisconsin, Iowa, Minnesota, Colorado, and Dakota. The Columbus & Hocking Coal and Iron Company have erected at Ashland, Wisconsin, at the head of lake navigation, a large and complete dock system, with storage capacity of 100,000 tons, and with the most improved machinery for elevating and transferring coal from vessels to cars. Coal from their Hocking Valley mines is now taken in cars to Toledo, and from there shipped by vessels to Ashland, where it is again loaded into cars and sent on its journey to markets distant hundreds of miles west of that point. This investment would indicate a faith that these new markets will continue to be held by Ohio, and demonstrates that the coal of the state will stand transfer and long haulage. The superior quality of the coals of Ohio over those of her immediate western neighbors, and her natural advantages which give her lower rates for mining (as adopted by the inter-state convention of operators and miners), are prominent factors in the competition for this trade. That Ohio is outstripping her sister states in these markets is shown by the fact that in 1886 Indiana fell off 25,000 tons, and in 1887 gained but 217,711 tons on her product of 1886, while the increase in Illinois in 1887 was only sufficient to cover her falling off in 1885 and 1886. As against this Ohio has gained in her output in these two years the enormous amount of 2,485,529 tons, and is rapidly advancing to the place of second in coal product of the states of the Union, a position hitherto held by Illinois.

From these facts it would seem that the introduction of natural gas so far from having had a baneful effect upon the coal trade of the state has, on the contrary, proved beneficial by forcing our coal product upon localities hitherto undreamed of, and which have proven to be of consumptive capacity beyond expectation. The future outlook for the trade

*In reference to the markets of the Northwest, a recent number of the *Black Diamond* says: "The Northwest is almost a new nation, suddenly developing, suddenly prosperous, and of huge proportions. Its industries have grown with such amazing rapidity that its demand in almost every field exceeds the supply. The conditions are such that only the beginning of this business phenomenon is yet apparent. There is no reason why the material growth of the Northwest should not in the immediate years to come exceed even that of the past. The Northwest has taken, at high prices, all the coal it could get and is clamoring for more. This demand with each succeeding year will be increased. The prize to be struggled for is something grand. The magnitude of the coming coal demand from the Northwest can scarcely be overestimated. Coal is wanted in the Northwest to-day, to-morrow, next week, next month, and for the years to come, in greatly increasing quantities. The demand will be supplied, and profitably, from some source."

is highly flattering, and the opening of new mines in the state during the year has been in excess, it is believed, of any previous year in its history. The developing of new fields, or the extension of old ones, has also followed the improved condition of trade, and will be noticed in another part of this report.

The high price of foreign coke for furnace use, and the rise in price of anthracite for domestic purposes, together with the substitution of crushed coke in its place for the now generally adopted base-burner heating stoves, has stimulated inquiry into the feasibility of coking our coals, and considerable progress has been made in this direction, which is elsewhere noticed.

SUMMARY FOR THE YEAR.

The term of office of the District Inspectors ended on the 30th day of April last. The names of the entire old force were presented by the Chief Inspector to the Executive for reappointment, for three years, and Messrs. Bell and Morris were by him approved and, giving the usual bond, were qualified. The name of Wm. Dalrymple, presented for reappointment in the First District, was returned to the Chief Inspector endorsed "not approved." No other name having been submitted by the Chief Inspector for the position, Mr. Dalrymple, under the law, holds over until April 30, 1888.

All the mines of the state that are subject to the provisions of the Statute have been inspected during the year, and their condition generally is improved. The steady work that has characterized the year has given the District Inspectors full employment, and when to this is added the constant demand upon them for scale inspection and the increasing number of mines coming under the law, it is found that the present force is not adequate for properly carrying out the intent of the Statute, and an increase is elsewhere recommended.

During the year twenty-three old mines have been worked out or abandoned, and seventy-five new mines have been opened. These are distributed among the mining districts as follows:

First District.....	6 abandoned.	15 opened.
Second District	8 "	45 "
Third District	9 "	15 "

It will be observed that the Third District shows the largest number of abandoned mines, while the Second District has the largest number of new mines. There are a few mines, in Belmont and Jefferson

counties, whose product was consumed in iron and glass works belonging to their owners, that have ceased operations owing to the mills having been supplied with natural gas. These mines are not enumerated as abandoned, as it is possible that their suspension may be but temporary.

At the end of the year there were 399 mines in the state employing more than ten men each, and 330 that do not give employment to that number, making a total of 729 coal mines, large and small, in the state.

As improvement in the mines progresses, the number of such made should decrease from year to year. This is not the case, however, with the present year, as its record of improvements is largely in excess of that of 1886, and serves to show that during profitable seasons mine owners are more willing, as they are better able, to put and keep their mines in good condition. Since my last report there has been thirty-nine furnaces built, nine fans erected, fifty air shafts sunk, seven second openings made, and eight stairways, as means of escape, put in. These are divided among the different districts as follows :

	1st District.	2d District.	3d District.
Furnaces.....	8	26	5
Fans.....	8	.....	1
Air Shafts.....	10	28	12
Second Openings.....	6	1	.....
Stairways.....	5	.....	3

In addition to the above improvements made, the District Inspectors have examined and tested seventy-four mine scales during the year.

The following table gives these improvements in detail :

LIST OF IMPROVEMENTS MADE IN THE MINES OF OHIO, IN 1887.

Name of Mine.	Air shafts.	Second openings.	Stairways or ladders.	Furnaces.	Fans.	Safety catches.	Safety gates.
<i>Athens County.</i>							
Briar Hill.....		1					
Happy Hollow No. 1	1						
Coe Hill.....	1			1			
Picketts.....	1			1			
Excelsior.....	1						
Sedalia ..	1			1			
Minker Run	1			1			
West Floodwood.....	1						
No. 10.....		1	1		1		1
Republic		1	1		1		1
<i>Columbiana County.</i>							
Pleasant Valley.....	1			1			
Quaker Valley.....	1						
Foreheads.....	1						
<i>Carroll County.</i>							
Hazelton No. 1.	1			1			
" No. 2.....	1			1			
Star	1			1			
<i>Coshocton County.</i>							
Rock Run.....	1			1			
Morgan Run.....	1			1			
Franklin No. 1.....	1						
<i>Guernsey County.</i>							
Norris.....		1					
<i>Gallia County.</i>							
Carl.....				1			
<i>Hocking County.</i>							
Thoroughfare.....	1			1			
Raccoon				1			
<i>Jackson County.</i>							
Chapman.....				1			
Eureka.....					1		
Standard					1		
Eliza					1		
Morgan No. 3.....					1		
Northern.....		1			1	1	
Kessinger.....	1						
Grace		1	1			1	1
Fluhart No. 2.....		1	1		1	1	1

Name of Mine.	Air shafts.	Second openings.	Stairways or ladders.	Furnaces.	Fans.	Safety catches.	Safety gates.
<i>Jackson County—Concluded.</i>							
Wellston No. 3.....	.....	.....	1	.....	.....	1	.....
Worth	1	.....	.....	.....	.....	.....	.....
<i>Medina County.</i>							
Excelsior.....	1	.....	.....	.....	.....	.....	.....
Diamond No. 2.....	1	.....	.....	.....	.....	.....	.....
<i>Muskingum County.</i>							
Lehigh.....	1	.....	.....	1	.....	.....	.....
Irish No. 1... ..	.....	.....	.....	1	.....	.....	.....
“ No. 2.....	1	.....	.....	.....	.....	.....	.....
Qualey	1	.....	.....	1	.....	.....	.....
Manley No. 1.....	1	.....	.....	1	.....	.....	.....
“ No. 2.. ..	1	.....	.....	1	.....	.....	.....
<i>Mahoning County.</i>							
Brownlee.....	1	.....	.....	.....	.....	.....	.....
<i>Perry County.</i>							
Simons.. ..	1	.....	.....	1	.....	.....	.....
Coyle.....	1	.....	.....	1	.....	.....	.....
Union No. 1.....	1	.....	.....	1	.....	.....	.....
“ No. 2.....	1	.....	.....	1	.....	.....	.....
“ No. 3.. ..	.....	.....	.....	1	.....	.....	.....
C. & H. C. & I. Co. No. 5.....	1	.....	.....	1	.....	.....	.....
Sunday Creek No. 7.....	1	.....	.....	1	.....	.....	.....
Crescent.....	1	.....	.....	1	.....	.....	.....
C. & H. C. & I. Co. No. 11.....	1	.....	.....	1	.....	.....	.....
Dickson.....	1	.....	.....	1	.....	.....	.....
Daugherty.....	1	.....	.....	.....	.....	.....	.....
Wallace No. 1.....	1	.....	.....	.....	.....	.....	.....
Walnut Hill.....	1	.....	.....	1	.....	.....	.....
<i>Stark County.</i>							
Hadley No. 3	1	.....	.....	1	.....	.....	.....
Osnaburgh.....	1	.....	.....	1	.....	.....	.....
Youngstown.....	.....	.....	.....	1	.....	.....	.....
Hern Brook.....	1	.....	1	.....	.....	.....	.....
Camp.....	1	.....	1	.....	.....	.....	.....
West Massillon No. 2.....	.....	.....	.....	.....	.....	1	.....
<i>Summit County.</i>							
Talmadge.	1	.....	.....	.....	.....	.....	.....
Dennison No. 2 .....	.....	.....	.....	1	.....	.....	.....
<i>Tuscarawas County.</i>							
Stone Creek.....	1	.....	.....	1	.....	.....	.....
Somerdale No. 1.....	1	.....	.....	1	.....	.....	.....
“ No. 2.....	1	.....	.....	1	.....	.....	.....

Name of Mine.	Air shafts.	Second openings.	Stairways or ladders.	Furnaces.	Fans.	Safety catches.	Safety gates.
<i>Tuscarawas County—Concluded.</i>							
Barnheizel	1	.....	.....	1	.....	.....	.....
Mineral Ridge	1	.....	.....	1	.....	.....	.....
<i>Trumbull County.</i>							
Stewart .....	.....	.....	.....	.....	.....	1	.....
<i>Wayne County.</i>							
Fox Lake No. 2.....	1	.....	1	.....	1	1	.....
Total.....	50	7	8	39	9	7	4

This is certainly a good showing for the year, and if to this be added the record of improvements previously reported, we find that in the last three years and a half (or since the present law went into force) there has been one hundred and twenty-eight air shafts sunk, twenty-five second openings made (in addition to such air shafts as can be used for this purpose), thirty stairways, or ladders, put into shaft mines, one hundred and forty furnaces built, forty-four fans erected, and thirty-three safety catches put upon cages. When it is considered that there are to-day but 399 mines in the state coming directly under the law, and that these improvements have been made, generally, in mines where they did not previously exist, it will be seen that much good has been accomplished, and it is, upon its face, proof that the mines of the state *are in good condition*. It is with pride (pardonable, perhaps) that the writer points to the record of what has been accomplished during his term of office, and cheerfully gives full credit to his deputies for the faithful manner in which they have performed the duties incumbent upon them.

It is well, also, to notice the number of *fans* erected, as showing how rapidly this form of mechanical ventilation is taking the place of the furnace in Ohio.

STATISTICS.

The output of coal in Ohio was larger in 1887 than in any previous year in its history. This is true even if the pea coal and slack (now first reckoned in the product) be omitted from the calculation. In the

record for this year only such of these two sizes are included as was sold and shipped, and the aggregate for the year places Ohio ahead of all her western sisters in tonnage, and second only to Pennsylvania in her coal production. The table below gives the output of the state from 1872 to 1887:

Years.	Tons.
1872	5,315,294
1873	4,550,028
1874	3,267,585
1875	4,864,259
1876	3,500,000
1877	5,250,000
1878	5,500,000
1879	6,000,000
1880	7,000,000
1881	8,225,000
1882	9,450,000
1883	8,229,429
1884	7,650,062
1885	7,816,179
1886	8,435,211
1887	10,301,708

The product of the state by counties, as compared with their output for 1886, is given in the following table, which is for the calendar year and reckoned at 2,000 pounds to the ton:

COAL PRODUCTION BY COUNTIES IN 1886 AND 1887.

Counties.	Tonnage for 1887.			Total 1887.	Total 1886.
	Lump.	Nut.	Pea & slack.		
Perry	1,535,912	179,414	155,515	1,870,841	1,607,666
Jackson	863,947	194,888	76,770	1,135,605	856,740
Athens	884,622	141,900	57,021	1,083,543	899,046
Hocking	693,097	116,914	43,052	853,063	741,571
Stark	586,014	81,973	116,177	784,164	593,422
Belmont	494,974	108,363	118,430	721,767	533,779
Guernsey	360,340	100,475	92,798	553,613	433,800
Columbiana	393,617	74,985	47,455	516,057	336,063
Tuscarawas	363,094	81,554	61,818	506,466	267,666
Jefferson	222,277	40,328	31,270	293,875	275,666
Carroll	186,624	39,137	67,567	293,328	216,630
Mahoning	210,294	18,999	43,056	272,349	313,040
Medina	178,772	30,425	16,290	225,487	252,411
Meigs	153,444	23,051	8,710	185,205	192,263
Muskingum	127,353	9,442	35,133	171,928	96,601
Trumbull	132,829	27,058	8,102	167,989	188,531
Lawrence	113,790	22,272	7,497	143,559	166,933
Coshocton	88,367	17,412	19,012	124,791	52,934

COAL PRODUCTION BY COUNTIES IN 1886 AND 1887—Concluded.

Counties.	Tonnage for 1887.			Total 1887.	Total 1886.
	Lump.	Nut.	Pea & slack.		
Wayne.....	84,906	8,436	11,808	105,150	109,057
Summit.....	76,110	5,700	14,005	95,815	82,225
Vinton.....	69,043	11,702	8,982	89,727	60,013
Portage.....	48,649	4,442	12,072	65,163	70,339
Gallia.....	13,000	.....	2,365	15,365	17,424
Holmes.....	7,407	2,283	836	10,526	12,670
Noble.....	4,000	1,320	1,000	6,320	3,342
Morgan (estimated).....	3,500	.....	600	4,100	4,370
Harrison.....	3,643	72	317	4,032	5,509
Washington.....	1,480	400	.....	1,880	5,500
	7,901,105	1,342,945	1,057,658	10,301,708	8,435,211

It will be observed that with few exceptions the relative production of the counties varies but little with the record of former years. The first twelve counties on the list show each a largely increased product, and reference to the next table given will show an increased force of employes in each, and an increased average time made by them, with the exception of Athens and Jefferson, whose time was the same as in 1886. Conspicuous among the twelve counties mentioned above is Tuscarawas, whose product is nearly double that of 1886. This is accounted for by the number of new mines of large capacity that have been opened within her borders during the year, and the increased force and time worked by all. It will be observed that the Hocking Valley (Perry, Athens and Hocking counties) furnishes more than one-third of the entire tonnage of the state, and that of these three counties, Perry's output is almost equal to the other two combined, and is nearly one-fifth of the gross production of the state. The average time made by the mines of the state for the year (computed from the time worked by the commercial mines only) is 228 days, being twenty-two days more than was made in 1886. The returns made to this office show that there were 1142 miners, and 658 outside hands, more employed this year than were last, and that the total number of men engaged in the industry in the state is 22,237, or an increase over 1886 of 1800. The number of new mines opened during the year was seventy-five, while the mines worked out or abandoned were twenty-three, showing an increase of fifty-two commercial mines in the state, as compared with last year's report. These facts are sufficient to account for the largely increased tonnage, and at the same time go to show a constantly improving

condition of affairs consequent upon the harmonious relations existing between employers and employed, and the satisfactory basis upon which these relations rest. The only counties in the state showing a decided decrease in their tonnage are Mahoning, Trumbull, Medina and Lawrence. The first two of these show a large decrease in men employed and (in Trumbull) of time worked. It is possible that the introduction of natural gas in Youngstown and vicinity may have had some effect in this direction, and it is certain that the large mines of these two counties are being worked out faster than new ones take their places. The decrease in Medina arises from a lessened force, while this cause and a shorter average time brought about the decrease in Lawrence.

The following table gives a summary, in a condensed form, of the tonnage, time worked, employes and casualties in each county:

TABLE OF TONNAGE, TIME WORKED, NUMBER OF MEN, ETC., IN EACH COUNTY IN 1887.

Counties.	Tonnage.	Number of mines.	Average weeks worked.	Number of miners.	Outside employes.	Accidents.	Fatalities.
Athens	1,083,543	44	35	2,080	318	2	6
Belmont	721,767	54	43	1,092	241	6	3
Columbiana..	516,057	57	44	872	185	1	1
Coshocton	124,791	20	47	219	33	1	.....
Carroll.....	293,328	27	44	533	87	5	.....
Guernsey	553,613	15	31	795	104	5	1
Gallia.....	15,365	2	40	30	3	.....	.....
Holmes.....	10,526	12	40	31	6	.....	.....
Harrison	4,032	7	.....	16	1	.....	1
Hocking	853,063	17	31	1,389	253	2	3
Jackson.....	1,135,605	64	35	2,213	291	5	3
Jefferson.....	293,875	20	40	495	94	3	.....
Lawrence	143,559	22	42	306	52	1	2
Meigs.....	185,205	15	28	495	118	.....	1
Muskingum	171,928	73	38	385	91	2	.....
Mahoning.....	272,349	31	43	642	98	3	1
Medina	225,487	9	41	550	61	3	.....
Morgan (estimated)	4,100	.....	.....	10	2	.....	.....
Noble.....	6,320	1	.....	8	4	.....	.....
Perry	1,870,841	70	34	3,008	633	7	5
Portage	65,163	3	34	138	35	.....	.....
Summit.....	95,815	11	38	156	28	3	.....
Stark	784,164	57	35	1,561	253	17	6
Tuscarawas	506,466	47	37	852	149	3	2
Trumbull	167,989	26	33	533	96	4	.....
Vinton	89,727	19	44	200	51	1	.....
Wayne	105,150	5	36	261	71	1	1
Washington.....	1,880	1	.....	7	2	.....	.....
Totals	10,301,708	729	913	18,877	3,360	75	36

As showing the number of mines and employes in each county, and as an argument in favor of an increase in the inspecting force, asked for in another part of this report, the following table is inserted :

NUMBER OF COAL MINES AND EMPLOYES IN OHIO, BY COUNTIES.

Counties.	Commercial mines.	Country banks.	Total miners.	Number of miners.	Number of outside men.	Total employes.
Athens.....	38	6	44	2,080	318	2,398
Belmont.....	27	27	54	1,092	241	1,333
Columbiana.....	22	35	57	872	185	1,057
Coshocton.....	12	8	20	219	33	252
Carroll.....	10	17	27	533	87	620
Guernsey.....	11	4	15	795	104	899
Gallia.....	2	.....	2	30	3	33
Holmes.....	1	11	12	31	6	37
Harrison ..	.....	7	7	16	1	17
Hocking	17	.....	17	1,389	253	1,642
Jackson.....	49	15	64	2,213	291	2,504
Jefferson.....	9	11	20	495	94	589
Lawrence....	5	17	22	306	52	358
Meigs.....	11	4	15	495	118	613
Muskingum..	23	50	73	385	91	476
Mahoning.....	13	18	31	642	98	740
Medina.....	7	2	9	550	61	611
Morgan.....	.....	.....	.....	10	2	12
Noble.....	1	.....	1	8	4	12
Perry.....	63	7	70	3,008	633	3,641
Portage.....	3	.....	3	138	35	173
Summit.....	5	6	11	156	28	184
Stark.....	25	32	57	1,561	253	1,814
Tuscarawas...	22	25	47	852	149	1,001
Trumbull.....	14	12	26	533	96	629
Vinton.....	6	13	19	200	51	251
Wayne.....	2	3	5	261	71	332
Washington.....	1	.....	1	7	2	9
Total	399	330	729	18,877	3,360	22,237

PRODUCTION OF IRON ORE IN 1887.

This year's product of iron ore is in excess of last year by 32,981 tons. Most of this increase is in the Hematite column. The largest increase is in Lawrence county, (52,579 tons), while Jackson leads the loss with a decrease of 21,674 tons from her production of 1886. In the following table of output by counties 2,268 pounds has been reckoned to the ton.

AMOUNT OF IRON ORE MINED IN 1887.

Counties.	Black Band.	Hematite.
Columbiana .....	.....	7,800
Gallia .....	.....	8,326
Hocking .....	.....	9,118
Jackson .....	.....	36,362
Lawrence .....	.....	147,479
Mahoning	21,630	.....
Perry .....	.....	27,711
Scioto .....	.....	14,784
Tuscarawas.....	61,595	.....
Trumbull.....	4,740	.....
Vinton.. .....	.....	37,920
Totals.....	87,965	289,500

Total tons, 377,465.

PRODUCTION OF FIRE CLAY IN 1887.

Below will be found a table giving the production of fire clay for the year. This business has been in better condition than it was in 1886, as will be seen by an analysis of this table. It will be observed that with two exceptions every county shows an increased product, and the aggregate increase over 1886 amounts to 99,767 tons. An increased time worked will also be noticed, as well as an increase in the number of men employed. Scioto county shows the largest increase in product and employes, but the time worked is the same as in 1886. Jefferson comes next in an increased product, but shows a decrease in time and men. Tuscarawas has more than doubled her product, and shows an average time made of seven weeks more than in 1886, with a small increase in the number of men. Columbiana has increased largely her time made and men employed, but does not show the increase in product that should accompany these conditions. Stark shows an increase in time and men, with a largely decreased product, which can only be accounted for upon the supposition that in one year or the other the returns received from this county could not have been correct.

AMOUNT OF FIRE CLAY MINED IN 1887.

Counties.	Weeks worked.	Number of miners.	Number employed in manufacture.	Tons.
Columbiana	49	36	486	65,984
Hocking	40	11	99	21,127
Jackson	51	15	57	16,760
Jefferson	48	63	441	149,095
Lawrence	48	27	72	22,480
Mahoning	36	3	.....	400
Muskingum	8	5	.....	1,871
Perry .....	.....	2	.....	105
Stark.....	37	9	45	6,500
Scioto	35	139	251	61,110
Tuscarawas.....	44	32	144	21,044
Totals .....	.....	342	1,595	366,476

PRODUCTION OF LIMESTONE IN 1887.

The limestone business for the past year may be considered to have been much better than the average. Reports of dullness in the trade have reached this office from some of the large producing counties. Others (notably Hamilton), report trade as good but prices low. Reports from Clarke, Clinton, Delaware and Greene counties, represent the trade as having been *very* dull. On the lake, the counties of Erie and Sandusky complain of *extreme* dullness in the trade for the year, while the burden of reports from Ottawa is, "good—excellent—better than 1886," etc. Why the latter county should have met with better conditions during the year, than its neighbors is somewhat anomalous. All the other counties of the state report their business as having been excellent. Hardin, Highland, Miami, Muskingum, Preble and Wyandot, represent their business to have been unusually good, and seldom better. It will be observed that nearly every county gives a better average of time worked than was reported in 1886, and (with the exception of Clarke, Greene, Hamilton, Lucas and Ottawa); each returns an increase in the number of men employed. The total product of the state is largely in excess of that of 1886. This may arise in part from this department having secured a large number of names of those in the business, and a consequent increase in the returns made, but the additional returns over those received in 1886 were mainly from small producers, and not such as would make the increased product that has been reported. It is fair, therefore, to presume, that the trade generally was better than the average.

It was the intention to have made some calculations in this report whereby some close estimate could have been arrived at as to the relative weight of stone in the different counties. For this purpose queries in this direction were inserted in all the blanks sent out to producers. The answers to these questions were so much at variance that no reliable data could be gleaned from them, and the attempt to give estimates of the weight of stone has been abandoned. There appears to be considerable difference in the weight of stone in the different counties, and no doubt the same difference sometimes exists in the different strata of the same quarry, and green stone weighs more than dry. It seems, however, that, in consequence of stone being sold by measure and not by weight, a general ignorance of the weight of their stone exists among producers. Some of these returns made were evidently mere conjecture, and in one instance a perch of stone was returned as weighing more than a cubic yard. If it is desirable to arrive at the average weight of stone in each county, it would seem that accurate returns in this respect might be made by producers, which would enable the department to arrive at some sure basis upon which each county could, if need be, approximate to the general weight of its stone.

Below will be found a table exhibiting the product, time worked, and men employed in each county. As remarked in the last report, no record is kept of time worked or men employed in those counties digging limestone exclusively for fluxing. These parties dig for the furnaces by the ton, and they are so numerous and work so irregularly, that it is hardly possible to get correct returns from them, and application is made to the furnaces themselves for the amount they buy in this way.

PRODUCTION OF LIMESTONE IN OHIO IN 1887.

Counties.	Number of weeks worked.	Number of men employed.	Tons (2,000 lbs.) burned for lime.	Tons (2,000 lbs.) burned for fluxing.	Cubic feet of dimension stone.	Cubic yards of ordinary building stone.	Cubic yards for piers and protection purposes.	Square feet of flagging.	Square feet of paving.	Lineal feet of curbing.	Cubic yards for ballast or macadam.
Allen.....	32	111	6,262	.....	.....	14,682	694	34,700	36,000	4,450	19,613
Adams	15	13	330	.....	.....	8	20	.....	.....	.....	3,416
Belmont .....	.....	4	.....	.....	.....	.....	.....	.....	.....	.....	222
Butler.....	35	37	3,150	.....	1,250	5,858	25	9,625	5,000	11,075	.....
Crawford.....	24	16	1,830	.....	1,300	3,255	210	500	.....	.....	.....
Clermont.....	12	5	.....	.....	.....	919	.....	.....	.....	.....	.....
Clarke.....	39	85	50,083	.....	61,300	9,881	558	8,000	24,700	8,500	37
Clinton.....	25	52	1,072	.....	10,625	3,617	236	600	1,600	400	2,591
Delaware.....	40	62	53,561	.....	4,200	3,756	958	14,075	400	1,000	4,301
Darke .....	.....	6	765	.....	.....	.....	.....	.....	.....	.....	9,890
Erie	46	236	171,550	.....	105,600	23,584	28,040	15,450	11,122	1,125	9,810
Franklin	35	92	4,230	.....	20,510	32,018	926	.....	.....	2,578	4,550
Greene	30	45	9,943	.....	9,525	4,664	558	1,120	100	1,510	1,298
Gallia .....	.....	.....	.....	3,365	.....	.....	.....	.....	.....	.....	.....
Hardin	27	139	332	.....	.....	2,005	.....	2,500	.....	.....	147,950
Hocking.....	.....	.....	.....	6,994	.....	.....	.....	.....	.....	.....	.....
Holmes .....	.....	9	230	.....	1,650	75	.....	.....	.....	.....	1,590
Highland.....	42	68	12,562	.....	104,537	6,395	46	3,392	3,031	500	243
Hancock	38	38	5,850	.....	.....	13,845	244	.....	.....	.....	1,853
Hamilton	37	412	9,524	.....	.....	83,336	.....	7,245	52,016	6,950	48,229
Jackson .....	.....	.....	.....	3,876	.....	.....	.....	.....	.....	.....	.....
Lawrence .....	.....	.....	.....	124,963	.....	.....	.....	.....	.....	.....	.....
Lucas	30	39	.....	.....	9,450	3,029	948	2,300	10,240	500	14,304
Logan	30	14	.....	.....	2,500	3,810	465	1,800	7,500	332	.....
Montgomery	43	139	5,362	.....	175,000	17,195	2,325	33,360	.....	4,340	.....
Muskingum.....	45	62	3,740	22,400	2,747	5,562	278	10,600	11,400	3,998	1,632
Mahoning .....	.....	.....	.....	48,433	.....	.....	.....	.....	.....	.....	.....
Marion	45	169	62,287	40,083	20,666	3,426	4,722	8,000	4,700	400	56,786
Miami.....	37	171	8,762	.....	118,482	41,669	9,984	28,437	71,494	65,826	7,307
Ottawa.....	35	197	93,080	45,336	2,000	4,939	21,218	100	.....	.....	1 60

PRODUCTION OF LIMESTONE IN OHIO IN 1887—Concluded.

Counties.	Number of weeks worked.	Number of men employed.	Tons (2,000 lbs.) burned for lime.	Tons (2,000 lbs.) used for fluxing.	Cubic feet of dimension stone.	Cubic yards of ordinary building stone.	Cubic yards for piers and protection purposes.	Square feet of flagging.	Square feet of paving.	Lineal feet of curbing.	Cubic yards of ballast or macadam.
Perry	33	12	8,835	9,111	279,026	23,218	5,446	163,350	42,150	19,150	7,097
Preble	24	156	140	.....	4,500	3,295	107	2,625	7,742	2,000	1,637
Putnam .....	.....	36	28	.....	.....	839	.....	.....	.....	.....	.....
Paulding .....	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....
Scioto .....	.....	.....	.....	59,392	.....	.....	.....	.....	.....	.....	.....
Seneca	31	83	10,155	.....	9,275	6,348	432	1,175	.....	4,000	41,307
Stark	27	15	16,200	.....	.....	.....	.....	.....	.....	.....	.....
Sandusky	41	71	35,045	.....	.....	1,907	.....	500	.....	.....	4,500
Shelby	32	21	5,650	.....	.....	.....	.....	.....	.....	.....	.....
Tuscarawas .....	.....	.....	.....	2,381	.....	.....	.....	.....	.....	.....	.....
Van Wert	25	7	2,265	.....	.....	1,616	.....	.....	.....	.....	20
Wyandot	30	31	8,750	.....	1,250	4,820	465	1,500	.....	.....	5,613
Wood	39	109	27,454	.....	5,000	27,673	27	.....	.....	540	8,962
Totals .....	.....	2,765	619,027	478,674	950,393	385,274	78,932	250,954	289,195	139,174	416,018

NOTE.—In reducing the various returns to a common standard a cord was reckoned to weigh 11,000 pounds, and to contain 128 cubic feet. Where the amount of lime burned was returned (instead of the amount of stone) it was converted into tons of stone upon the basis of 140 pounds of stone to the bushel of lime (70 pounds) and 210 pounds of lime to the barrel. Where block or cut stone for paving has been returned by the cord or cubic yard it has been reduced to square feet, upon the assumption that the blocks were six inches deep, and one cubic foot or yard would make two, surface measure. Where flagging has been returned by cubic measure it has been reckoned that the flags were four inches in thickness, and that one cubic foot or yard would make three, square measure.

CASUALTIES IN 1887.

During the year thirty-six deaths have occurred in the mines of the state. Two of these were from natural causes. This is seven less than were recorded in 1886. Of non-fatal accidents there were seventy-five, or ten more than in 1886. The aggregate of casualties is but three in excess of that year, which, taken in connection with the extraordinary increase in time, output, and number of men employed, shows a much more favorable condition in this respect than has hitherto attended these returns. Two of the deaths were from natural causes and can not be attributed to the risks of mining, while one occurred in an ore mine. If we deduct these three from the list we find that in Ohio, during 1887, there were 312,173 tons of coal mined for each life lost; 137,356 tons of coal mined for each accident, and taking into consideration the number of men employed in and about the mines of the state, that a life was lost for every 673 men employed; a non-fatal accident occurred for every 296 men employed.

This compares favorably with other states, as is shown by their reports for the same year. In Indiana the record shows, 189,277 tons mined for each life lost; 153,224 tons mined for each non-fatal accident; a life lost for each 430 men employed; a non-fatal accident for each 609 men employed.

The mine inspectors' reports of Illinois for 1887, show 244,735 tons mined for each life lost; 57,105 tons mined for each non-fatal accident; a life lost for each 654 men employed; a non-fatal accident for each 149 men employed.

The Pennsylvania bituminous reports are not at hand for 1887, but those for 1886 show, 366,313 tons mined for each life lost; 88,876 tons mined for each non-fatal accident; a life lost for every 707 men employed; a non-fatal accident for every 171 men employed.

In Great Britain, in 1886, there were 165,287 tons mined for each life lost, and a life was lost for each 545 men employed.

The following table shows the deaths and accidents as divided among the counties in which they occurred:

TABLE OF ACCIDENTS AND DEATHS, AND COUNTIES IN WHICH THEY OCCURRED.

County.	Accidents.	Deaths.
Athens.....	2	6
Belmont.....	6	3
Columbiana.....	1	1
Coshocton.....	1	.....
Carroll.....	5	.....
Guernsey.....	5	1

TABLE OF ACCIDENTS AND DEATHS, AND COUNTIES IN WHICH THEY OCCURRED—Concluded.

Counties.	Accidents.	Deaths.
Harrison.....	.....	1
Hocking	2	3
Jackson	5	3
Jefferson.....	3	.....
Lawrence.....	1	2
Medina.....	3	.....
Muskingum	2	.....
Meigs .....	.....	1
Mahoning.....	3	1
Perry	7	5
Summit	3	.....
Stark.....	17	6
Tuscarawas.....	3	2
Trumbull	4	.....
Wayne.....	1	1
Vinton.....	1	.....
Total.....	75	36

It will be noticed that Stark county shows the largest number of both fatal and non-fatal casualties of any county in the state, but is closely followed in the death list by Athens and Perry. The casualties are divided between the mining districts in the following proportion :

First District..... 11 accidents, 15 deaths.
Second District.....32 accidents, 12 deaths.
Third District.....32 accidents, 9 deaths.

The First District comprises the mines of Jackson county and the Hocking Valley, with the exception of Perry county, which belongs to the Second District. The Third District is mainly made up from the mines of the Mahoning and Tuscarawas Valleys. If now we deduct the casualties in Perry county from the Second District and add them to those of the First District, we find that the mines of southern Ohio, comprising those of Jackson county and the Hocking Valley, are considerably below the other districts in the number of non-fatal accidents, but show more fatalities than the rest of the state combined, while the Mahoning and Tuscarawas Valleys furnish nearly half the non-fatal accidents and one-fourth the deaths of the year. The record for the Second District (omitting Perry county) being more favorable than that of the other two, being but thirty-two casualties in all, as against forty in the Third District, and thirty-eight in the First, with Perry county added.

Below is given a table showing the causes of the casualties enumer

ated, and, as has been noticed in all previous reports, accidents from falls of coal or roof are largely in the majority, and seem to be increasing in frequency. In 1886 these casualties formed one-half the total, while this year they amount to nearly two-thirds of the whole. This may be partly accounted for by the increased number of mines and miners, and the greater time and increased tonnage made by all.

TABLE OF CASUALTIES, WITH THEIR CAUSES.

Cause.	Accidents.	Deaths.
Falls of slate or roof.....	34	15
Falls of coal.....	20	10
Falls of ore.....	.....	1
Run over by bank cars	14	3
Premature explosion of powder.....	5	2
Caught by descending cage.....	.....	2
Falling from tippie.....	.....	1
From railroad cars.....	1	.....
Explosion of boiler	1	.....
Natural causes.....	.....	2
Totals.....	75	36

A detailed list of all accidents and deaths in the mines of the state during the year is as follows :

FATAL ACCIDENTS.

1886.

November 20th. John Windlemoot, at Fluhart's mine, Jackson county, killed by a fall of slate.

November 26th. Joshua Happlewith, at Happy Hollow mine, Athens county, injured by a fall of coal, and died November 29th.

November 30th. Truman Casey, at Belfont mine, Lawrence county, killed by a fall of slate.

December 14th. George W. Knisely, Jr., at Goshen mine, Tuscarawas county, fell from tippie, and died December 17th.

December 16th. W. W. Owens, at Camp mine, Stark county, killed by a fall of slate.

December 21st. Richard Taylor, at Minglewood mine, Stark county, killed by a fall of slate.

December 29th. Michael Blosko, at C. & H. C. & I. Co. No. 21 mine, Athens county, killed by a fall of slate.

1887.

January 8th. James Whillen, at Thompson mine, Harrison county, killed by a fall of coal.

January 17th. John Lafollet, at Erush Fork mine, Hocking county, injured by a fall of coal and died January 22nd.

January 20th. Henry Kelly, at Slope mine, Columbiana county, killed by explosion of a bag of powder while taking some from it.

January 22nd. Wm. Moffit, at Brier Ridge mine, Guernsey county, killed by a fall of coal.

January 25th. Robert Collard, at Coal Ridge mine, Meigs county, killed by a fall of slate.

February 2nd. Michael Mallen, at Manly mine, Perry county, killed by a fall of coal.

February 15th. Wm. Hawkins, at Schecks mine, Belmont county, killed by a fall of roof.

February 16th. Wm Young, at O. S. C. & I. Co. No. 3 mine, Jackson county, killed by a fall of slate.

February 23rd. John Klinehaus, at New Castle mine, Lawrence county, killed by a fall of coal.

March 7th. John Ray, at Wheeling Creek mine, Belmont county, injured by a fall of soapstone and died March 16th.

March 22nd. David Buttery, at Happy Hollow mine, Athens county, injured by a fall of slate and died March 31st.

March 23rd. David Davis, at Tropic mine, Jackson county, caught by descending cage and died March 26th.

April 9th. Wm. Riley, at Dyer Ore mine, Tuscarawas county, killed by a fall of ore.

May 2nd. Elias Watkins, at C. & H. C. & I Co. No. 35 mine, Perry county, killed by a fall of rock.

May 4th. Wm. Moshier, at Section 29 mine, Hocking county, killed by a fall of coal.

May 11th. Michael Homolus, at C. & H. C. & I Co. mine 21, Athens county, killed by a fall of coal.

May 12th. Peter Allen, at Elm Run mine, Stark county, killed by a fall of roof.

May 26th. John Phillips, at Manning mine, Mahoning county, killed by a fall of coal.

June 2nd. Thomas Williams, at Elm Run mine, Stark county, killed by a fall of slate.

July 6th. E. A. Dearth, at Sunday Creek, No. 7 mine, Perry county, struck by a descending cage, while looking down the shaft.

August 9th. Robert Berger, at Cleveland mine, Stark county, by car running down the slope.

August 18th. James Crozier, at Shawnee Valley mine, Perry county, by a fall of slate.

August 29th. Thomas E. Jones, at Youngstown mine, Stark county, killed by crossing a shot as it exploded.

September 9th. James Winchell, at Brush Fork mine, Hocking county, killed by being caught between bank cars.

September 19th. Amos Richner, at Wheeling Creek mine, Belmont county, found dead at the furnace. Pronounced by the physicians to be from paralysis of the heart.

September 30th. John Wehr, at Fox Lake No. 2 mine, Wayne county, found dead. Death ascribed to heart disease.

October 3rd. David Mandry, at C. & H. C. & I Co. mine No. 5, Perry county, run over by bank cars and killed.

October 18th. C. J. Morgan, at Glen Eben mine, Athens county, killed by a fall of slate.

November 5th. W. H. Ward, at Poston's No. 1, Athens county, leg broken by a fall of coal, and died from exposure.

NON-FATAL ACCIDENTS.

1886.

November 17th. Geo. Miller, at Kelly mine, Lawrence county, face cut and burned, and sight destroyed by premature explosion of a charge.

November 18th. Michael Serankee, at Summers' mine, Hocking county, ribs broken and arm crushed and amputated, by being caught by bank cars.

November 19th. Michael McKenna, at Ohio Central No. 3, Perry county, finger cut off by a fall of coal.

November 20th. M. H. Crossley, at Conesville mine, Coshocton county, arm and collar bone broken by a fall of coal.

November 22nd. Benjamin Davis, at Summit mine, Summit county, shoulder dislocated by a fall of coal.

November 24th. John Beadnell, at Diamond mine, Jefferson county, collar bone broken by a fall of coal.

December 6th. Herman Wishman, at Camp Creek mine, Stark county, leg broken by being run over by bank cars.

December 10th. John Thomas, at Elm Run mine, Stark county, lost an eye by premature explosion of a shot.

December 11th. Robert R. Roberts, at Orange No. 1 mine, Carroll county, collar bone broken by a fall of coal.

December 13th. John Forsythe, at High Shaft, Jefferson county, leg broken by a fall of slate.

December 13th. Francis Kenna, at Elm Run mine, Stark county, leg broken by a fall of slate.

December 16th. Marion Tague, at Tague's No. 2 mine, Perry county, leg broken by a fall of slate.

December 18th. David Thomas, at Elm Run mine, Stark county, leg broken by a fall of slate.

December 20th. John Barrow, at Hern Brook mine, Stark county, three ribs broken by a fall of coal.

December 24th. Geo. Elliott, at C. & H. C. & I. Co. No. 7 mine, Perry county, hip dislocated by a fall of coal.

December 30th. Elonzo Spaid, at Baltimore mine, Guernsey county, leg broken by a fall of slate.

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January 4th. Wm. Long, at Baltimore mine, Guernsey county, face and breast burned drilling out a hole that had missed fire.

January 7th. Bass Shreiner, at Cleveland mine, Stark county, leg broken by a fall of coal.

January 9th. Martin Byrne, at Rend's No. 5 mine, Perry county, injured internally by being run over by a railroad flat.

January 11th. John Feathrie, at Elm Run mine, Stark county, leg and ankle broken by a fall of coal.

January 12th. John Hoisington, at Brush Fork mine, Hocking county, hip bone broken by a bank car.

January 13th. John Daniels, at C. & H. C. & I. Co. No. 7 mine, Perry county, leg broken by a fall of coal.

January 20th. Wm. O'Rourke, at Eliza mine, Jackson county, leg and two ribs broken by a fall of slate.

January 28th. Chas. Dinece, at Robinson's mine, Belmont county, arm broken by a fall of coal.

February 3d. Thos. Ramage, at Brookfield mine, Trumbull county, hips crushed by a fall of slate.

February 6th. Robert Smith, at Peacock mine, Muskingum county, face burned by premature explosion of shot.

February 7th. John Koehler, at Cleveland mine, Stark county, leg broken by a fall of slate.

February 12th. Lawrence Busby, at Scott's mine, Guernsey county, arm broken by a fall of slate.

February 14th. John W. Smith, at Stone Creek mine, Tuscarawas county, face and eyes burned by an explosion of dynamite.

February 16th. Chas. Odendahl, at C. & H. C. & I. Co. No. 7 mine, Perry county, severely crushed by a fall of slate.

February 17th. Edward Roose, at Brookfield mine, Trumbull county, leg badly cut by a fall of slate.

February 17th. Wm. Williams, at same time and place, had three ribs broken from same cause.

February 23d. Robert Garrett, at Franklin mine, Belmont county, knee fractured by a fall of slate.

March 5th. Daniel Jenkins, at Centre Valley mine, Jackson county, leg broken by bank cars.

March 6th. Elias Thomas, at Allen mine, Carroll county, hip dislocated by a fall of rock.

March 8th. Benj. Gilson, at Pioneer mine, Tuscarawas county, leg broken by a fall of slate.

March 14th. Wm. Lane, at Eureka mine, Jackson county, arm broken by a fall of slate.

April 2d. Henry Gregar, at Osnaburgh mine, Stark county, rib broken by being run over by cars.

April 3d. Harrison Adams, at Bernard's mine, Belmont county, collar bone broken by a fall of soapstone.

April 6th. H. Robertson, at Fairview mine, Mahoning county, arm broken by a fall of slate.

April 10th. Patrick Madigan, at Hametown mine, Wayne county, burned in face and breast by boiler bursting.

April 12th. Jno. Bennett, at Zaleski No. 4 mine, Vinton county, collar bone broken by a fall of coal.

April 14th. Miller Rich, at Willow Spring mine, Stark county, finger mashed (afterward amputated) by a fall of coal.

April 21st. W. M. Thacker, at Garfield mine, Jackson county, leg broken by a fall of slate.

April 25th. Jas. Sutton, at Franklin mine, Belmont county, run over by bank cars and ankle broken.

May 2d. Alex. Russell, at Glen Eben mine, Athens county, hand mashed by a fall of slate.

May 9th. John Burrill, at Fitz Allen mine, Carroll county, jaw fractured by a fall of coal.

May 11th. John R. Hoskins, at Trail Run mine, Guernsey county, collar bone broken by a fall of slate.

May 23d. Frank Call, at Coe Hill mine, Athens county, caught by bank cars, and arm broken.

May 27th. Thos. Price, at Brookfield mine, Trumbull county, caught by bank cars, and hip dislocated and bone fractured.

June 2d. Wm. McNamee, at Elm Run mine, Stark county, leg broken by a fall of slate.

June 6th. Wm. Sheppard, at Comet mine, Jackson county, run over by bank cars, and two ribs broken.

June 11th. Chas. Clinger, at Pittsburgh mine, Belmont county, rib fractured by a fall of slate.

June 11th. Edward Wagner, at Beller ore mine, Tuscarawas county, riding in a car on the incline, when a coupling broke and the car ran away. Knee joint fractured, and knee cap torn off.

June 20th. Dominick Eberthare, at Willow Bank mine, Stark county, two ribs broken by a fall of coal.

June 24th. Emil Schmoll, at Beaver Run mine, Stark county, jaw broken by a fall of rock.

July 20th. Isaac Owens, at Austin mine, Mahoning county, leg broken by a fall of slate.

July 21st. Jacob Berrar, at Hern Brook mine, Stark county, leg broken by a fall of coal.

July 28th. Michael Meehawk, at Trail Run mine, Guernsey county, two ribs dislocated by a fall of slate.

July 30th. Michael Bohan, at Cleveland mine, Stark county, three ribs broken by a fall of slate.

August 29th. Wm. Williams, at Star mine, Jackson county, leg broken by a fall of slate.

September 10th. Benjamin Hall, at Fairview mine, Mahoning county, leg broken by a fall of slate.

September 10th. Edward Thomas, at Orange No. 1 mine, Carroll county, leg broken by bank cars.

September 13th. Joseph Pollne, at Beaver Run mine, Stark county, leg broken by a fall of rock.

September 13th. Andrew Munster, at Willow Spring mine, Stark county, arm broken by bank cars.

September 17th. Anthony Scarey, at Farmer's mine, Columbiana county, leg broken by being run over by bank cars.

September 30th. Wm. Frederick, at Card mine, Medina county, finger cut off by a fall of slate.

October 3d. Peter Gongood, at Burnett mine, Summit county, leg broken by a fall of coal.

October 20th. John Gallagher, at Card mine, Medina county, shoulder dislocated by a fall of slate.

October 20th. Thos. Collier, at same time and place, had his arm broken from same cause.

October 21st. W. Cherry, at Qualey mine, Muskingum county, leg and rib broken by a fall of coal.

October 28th. Jonah Griffiths, at Fannie Furnace mine, Perry county, hand mashed by falling under bank cars.

October 31st. Michael Pinkerton, at Kelly mine, Jefferson county, leg broken and hip dislocated by a fall of slate.

November 3d. John Keevert, at Maple Hill mine, Belmont county, leg broken by bank cars.

November 5th. Ignatius McHugh, at Hazelton No. 2, Carroll county, leg broken by a fall of coal.

November 5th. J. D. Williams, at Burnett mine, Summit county, leg broken by a fall of coal.

RECENT COAL DEVELOPMENTS.

Within the past year Muskingum county has come rapidly to the front as a coal producing county, and developments have been made within its borders that give promise of opening up a large and profitable coal field, in the near future. Hitherto the mining operations of the county have been mainly conducted in the lower and middle Kittanning veins (Nos. 5 and 6). These veins have varied in thickness from three to four feet, often being below three feet, and seldom rising to four. From lack of railroad facilities the mines have been generally of small

capacity and their product has been mainly consumed in their vicinity, being hauled in wagons from the mines to Zanesville, the principal market. The recent extension of the Columbus & Eastern R. R. into Brush Creek township, and the building of the Zanesville & Ohio R. R. along the Muskingum river, from Zanesville to Malta, have opened up an outlet for large bodies of coal that have hitherto been neglected. The result is that in this county, where there were a year ago but nine mines that at any time of the year employed more than ten men each, there are now twenty-four regular shipping mines of large capacity.

A branch of the Columbus & Eastern R. R. leaves the main line at Darlington and, following the river for a short distance, pushes back into Brush Creek township and reaches what is now the center of a new field, at Cannelville, a thriving mining town which is rapidly building up and where, a year ago, hardly a house marked the spot. Within a mile of Cannelville there are at present eight openings fully equipped and working. This district has not as yet suffered from want of cars, and work is constant and steady, the only drawback to a rapidly increasing product being the lack of miners, and of houses for their accommodation. The veins of the district are the middle Kittanning (No. 6) and the upper Freeport (No. 7). The former is found about the level of the streams and is three and one-half feet thick. This vein thickens as it goes south from the Muskingum river, and is probably a foot thicker about Cannelville than it is at the river. It is, however, not being worked here, as attention is mainly confined to the upper Freeport (No. 7) which hereabouts develops a large body of cannel coal of excellent quality. The cannel lies above the bituminous, without parting between them, and takes the place of the black band ore at Iron Point, in Perry county, and at Port Washington, and other points in Tuscarawas county.

The bituminous coal of the vein varies here from eighteen inches to four and a half feet, while the cannel runs from nothing up to twelve feet in thickness, and it is found that where either of the coals increases in thickness the other correspondingly decreases, and vice versa. While the cannel coal is not always present, yet the area covered by the deposit is large and embraces sections 5, 6, 25, 26 and 27, of Brush Creek township. It is very abundant also on Turkey Run (in section 25, about one mile north from Cannelville), and can be reached here by a branch up the run, between Stovertown and Cannelville. The Chicago and Columbus Coal Company have two openings on the vein, about three-fourths of a mile south of Cannelville. Here the bituminous varies from eighteen inches to four feet in thickness, while the cannel runs from nothing up to seven feet. To the north of the town, and within a mile

of it, are six openings now in operation, viz., two owned by Manley & Co., one by the Cannelville Coal and Iron Company, one by the Columbus and Brush Creek Coal Company, and two by the Brush Creek Coal Company. The Qualey mine, owned by the Cannelville Coal and Iron Company, is in about 200 yards. The cannel coal only is worked in this mine, the bituminous being but eighteen inches thick, and is only dug in undermining. At this mine the cannel shows up eleven feet face, but only about seven feet of it is being worked, the balance not being sufficiently pure to warrant sending it to market. At the head of the hollow we find the two openings of the Brush Creek Coal Company. Here both coals are worked, being separated by the miner before shipment, as is the case in all these mines except the Qualey. On the east side of the Brush Creek Company's mine the cannel coal is found twelve feet thick, the bituminous running from twenty inches to two and a half feet, while on the west side the bituminous shows from four to four and a half feet of coal, and the cannel thins out until it disappears altogether as the operations get farther west. The description of these mines will serve for the whole of this district, and it only remains to be said that the quality of both these coals is excellent, that a market, ever increasing in its demands, has been found for the product, and that the latter has so far only been limited by the supply of miners.

Equally flattering prospects are shown in another portion of Brush Creek township, along the line of the Zanesville & Ohio R. R., in section 13. The only mine, however, yet opened here from which any practical information can be gathered, is that of Mr. W. H. Seelover. He has opened upon the upper Freeport (No. 7) vein, showing a face of six feet of most excellent coal, but without the cannel that accompanies it at Cannelville. Other mines are being opened in this neighborhood, but none of them are as yet sufficiently advanced to judge of their character. The same vein, and of the same thickness, can, however, be traced back in the hills in a south easterly direction, to Duncan Run, a distance of more than two miles. The middle Kittanning (No. 6) is also found here, running from three feet, at the river, to from four to five feet, back in the hills, and is above the creek levels. These hills have never been developed, most of the mining hereabouts having been done along the river. Both these veins are found along Duncan Run, and are evidently present in the northwest corner of Harrison and the northeast corner of Brush Creek townships.

Extensive developments of the Massillon coal field, in comparatively new territories, have also been made during the year, which go far to explode the theory that the deposits of this celebrated coal are about exhausted; and from what is shown by these explorations, it may be

assumed that for all practical purposes the supply of this coal will continue to be kept up for years to come. In what is known as the Sippo Valley, near Massillon, there are in all six mines opened, or being opened this year. Prominent among these is the Anderson mine, owned by the Howells Coal Company, and located five miles west of Massillon, on the Wheeling & Lake Erie Railway.

Their shaft is 178 feet deep, with five feet of coal of most excellent quality. The drillings here show a large basin, and of very uniform thickness, being from four and one-half to five feet in the several drill-holes. They are now putting in their hoisting derricks, chutes, tracks etc., and in a few weeks will be shipping coal. This is expected to be one of the best producing mines in the valley, and will in a few months have a capacity of 300 tons per day.

The same company are now drilling upon other land, about one mile south of the Anderson shaft. Seven holes have been sunk at this point, showing coal from four to five feet in thickness, and giving promise of an excellent basin. This is the deepest coal ever found in the Massillon district, the bore-holes running from 190 to 225 feet in depth.

The West Massillon Coal Company, and the Pigeon Run Coal Company have also opened new and extensive mines in the Massillon district during the year, while, near Dalton, in Wayne county, a shaft that has been in progress of sinking for some time past, now gives promise of early completion.

In Lawrence township, Stark county, near the line of Wayne county, Messrs. Ridgway & Burton have discovered, and are about to open a large deposit of coal which had previously not been known to exist. This basin lies about two miles northwest of the Minglewood mine, and between it and the old Fox Lake mine, and is perhaps a continuation of the Minglewood basin, although drill-holes had previously been sunk all *around* the new basin without touching it, and the land upon which it is found was not supposed to contain coal at all. The coal is found here at about 150 feet in depth, and the holes show from four to five feet of excellent coal. A mine of large capacity is expected to be in operation here at an early day.

In the Mahoning Valley the celebrated Brier Hill, or block coal, has long been supposed to be exhausted; but recent developments have shown this not to be the case. Messrs. Morris & Stambaugh have, during the past summer, been prospecting on the land of John Wolf, in Liberty township, Trumbull county, near the line of Mahoning county, and about two miles north of Youngstown. At a depth varying from 190 to 215 feet coal has been found, which is beyond doubt the Brier

Hill coal, and runs from three and a half to four and a half feet in thickness. Thirteen holes have been sunk, in eight of which coal has been found, and the indications are favorable for an extensive basin, although the prospecting has not yet been sufficient to determine its full area. It is the intention to commence opening this mine early in the spring.

COKE MANUFACTURE.

A revival of interest in the manufacture of coke has taken place, to some extent, in the state during the year, which it is well to notice in this report. A short sketch of this industry in Ohio in previous years may not be out of place in this connection.

The earliest effort at coking in Ohio was made at Leetonia in the year 1840. This coke was made from the lower Kittanning (No. 4) coal, and was hauled in wagons to Salem and Massillon, and used in foundry cupolas. About 1850 coke was made near Youngstown from the block coal, in bee-hive ovens, and was sold for foundry use. Messrs. Young and Chamberlain coked the No. 4 coal, at Leetonia, in 1857, and from this grew the present coking operations of the Cherry Valley Iron Works. The lower portion of the vein only is used by this company. The coking is done in bee-hive ovens, and the coke, while softer than Connellsville, is high in carbon and low in ash. It bears a burden well, and is used in their furnaces, being found to work very satisfactorily with the native ores. The Steubenville Coal and Mining Company commenced making coke from the slack of their shaft coal in 1858, and are still in the business. This coke was used in blast furnaces for some time, and it was found that a ton of foundry iron could be made with about 1,000 bushels of coke. At Steubenville Messrs. Spaulding, Woodward & Co., and their successors, The Jefferson Iron Works, commenced making coke in 1863, and continued doing so until 1885, when their operations in this direction ceased.

In Tuscarawas county the coals of the Middle Kittanning (No. 6) and the Lower Freeport (No. 6a) have been coked considerably. The former was coked, in 1868, by the Dover Furnace Co., at Canal Dover, and by Samuel Foutz & Co., at Trenton, from 1870 to 1873. At the Port Washington Iron Works, commencing in 1875, both these veins were coked for furnace use, but the coke was a failure from the start, and, although the coal was first crushed and washed, the coke was never used by itself. Considerable attention has been given, at times, to coking in Coshocton county, the No. 6 vein being used. In Belmont county the Pittsburgh & Wheeling Coal Co. built fifty ovens in 1882, some of which are still in operation. This coke is soft and friable, and is sold mainly for domestic use.

In 1874 the Ohio Iron Co. experimented with the coal of No. 6 vein at Zanesville. The coal was washed and coked in Belgian ovens, but the attempt was not successful, principally from the lack of practical knowledge on the part of those having the matter in charge.

Perhaps the most thorough effort at coking in Ohio was made at the Vinton Furnace, in Vinton county, in 1875-76. Extensive and complete machinery was erected here for crushing and washing the coal, and it was coked in Belgian ovens of the most approved type. Before the result of the experiment could be fully determined, financial difficulties caused a stoppage of the operations. Although at the time this experiment came to an end, the ovens had not got into good working order, the coke made was exceedingly hard and compact, and it was the opinion of the parties engaged in the enterprise that, with this machinery and ovens, coke could be made very cheaply, and second only to Connellsville in point of quality.

The increased interest in coking Ohio coals has taken practical form during the past year in two instances that are worthy of notice.

The ovens of the Nelsonville Coal and Coke Co., that have been idle since the Hocking Valley strike in 1884, were again put in operation in March of this year. The coal used here is the Bayley's Run vein (No. 7), and is remarkably free from sulphur. Twenty bee-hive ovens are in operation, with a product of about three thousand bushels per day. The slack is used mainly, but, when it is insufficient for the purpose, the product of the mine in nut and pea coal is added to it. The coal is first crushed and washed, and is then coked for forty-eight hours. Most of the coke product is crushed and used for domestic purposes, and finds a ready sale in Columbus and Chicago. It is also used in glass works for flattening. The product of this company is said to be better for domestic use than is the Pittsburgh coke now sold for that purpose, and the demand for it is far in excess of the capacity of the ovens.

Another territory, developed during the year, and which bids fair to become a large coke producing district, is on the lands of the Federal Valley Coal Company, in Berne township, Athens county. This company have opened two mines, on Federal Creek, near the mouth of Marietta Run, on the Pittsburgh (No. 8) vein, which shows an unusually large development, and runs, in this neighborhood, from nine to twelve feet thick, with a fire clay parting in the middle from eight inches to one foot in thickness. The seam is about equally divided by this parting, and in the mines of this company shows rather more than four feet of coal (remarkably free from impurities) both above and below the parting. It is safe to say that the upper and lower benches will *average* four

feet thick each. There is no other parting in the vein, and the roof is a strong sand rock and stands up well without posts. The cementing properties of this coal have long been known, but hitherto no attempt has been made to utilize it in the manufacture of coke. In 1875 the writer was shown samples of coke made here in ricks, by one who was entirely ignorant of practical cokeing, which were superior in appearance to any he had seen made from Ohio coal, and that warranted the assumption that in the hands of an expert coker results might be obtained which would make this coke a formidable competitor with those of Pennsylvania and West Virginia.

The Federal Valley Coal Company commenced experimenting with this coal in the early part of the present year, but cokeing operations did not assume a practical form until some time in August last. Before going into the venture permanently the services of an expert coker (Mr. N. W. Musgrave, of West Virginia) were secured, who, after some weeks spent in thoroughly examining the coal and its surroundings, gave his opinion that all the requisites for making a coke of sufficient purity for furnace use were present and that the enterprise possessed all the elements of success. Following upon this the company erected six ovens at their No. 1 mine, and eighteen others are in process of erection at mine No. 2. The ovens are the latest type of bee-hive, and those now in operation are producing about one thousand bushels per day of coke of most excellent appearance and hardness. All the ovens are not yet fired, nor are those in operation yet thoroughly dried or sufficiently hot for the best results, and it is expected that the quality of the coke will improve as the ovens get in better working condition. At mine No. 1 slack only is used, while at No. 2 the run of the mine is utilized. At both mines the coal is coked for forty-eight hours. It is the intention of the company to insure greater purity and freedom from sulphur by crushing and washing the coal before cokeing, and the improvements for so doing will be erected in the near future.

From the magnitude of this vein, the cheapness with which it can be mined, and the cementing properties of the coal, I am of the opinion that, with judicious management in the operations, this valley bids fair to become the coke producing district of the state. Nowhere else are the conditions so favorable for this result. So far as known the territory containing this coal will be found in Berne and Ames township, in Athens county, and Marion and Homer townships, in Morgan county, and possibly in the western part of Wesley township, in Washington county, and lies on Federal Creek and its tributary, Marietta Run. The indications go to show that the deposit is not extensive in Ames

township, west of Federal Creek, and that it increases in thickness from Federal Creek east. The dip of the strata is toward the southeast, and while at the mines on Federal Creek the openings are high enough in the hill to accommodate the ovens and tipples, the vein goes under cover to the east, on Marietta Run, below the mouth of the Jerry Run. From this it will be seen that for natural drainage the openings should be made on Marietta Run, where it will be necessary to open by shaft. These shafts, however, will not exceed fifty to sixty feet in depth, and I am informed that the best development of the vein is found where it passes under cover on this run.

Some analyses of the coals of this section are given in Vol. V of the Geological Survey, and are as follows :

	Moisture.	Volatile combustible matter.	Fixed carbon.	Ash.	Sulphur.
Lower Bench—W. W. Wickham's bank, Berne township.....	3.85	41.12	47.99	7.04	4.07
Lower Bench—W. Hogshead's bank, Homer township.	5.30	40.18	48.50	6.02	2.87
John Staffy's bank, Homer township.	5.39	41.18	46.32	7.11	4.16
Petroleum Co.'s bank, Homer township.....	4.55	39.99	45.86	10.00	4.89

It will be observed that the sulphur shown in these analyses varies considerably, and is high. The same can be said of the ash. They were made from samplings of the whole seam, as sent to market, exclusive of partings, and the variation would seem to show considerable difference, locally, in the character of the coal. It is believed, however, that much of this objectionable matter is found in the natural impurities of the vein, and can be removed by first crushing and washing the coal. There is no doubt as to the cementing properties of this vein in the Federal Creek Valley, and the sulphur seems to be the greatest difficulty in the way of its successful cokeing. If this can be overcome, by mechanical appliances, the saving to consumers in cost of transportation will be sufficient to insure profitable returns for any capital that may be invested in cokeing operations in the valley. The coke now being made (with the ovens not yet in perfect condition) is equal in appearance and density to the average now on the market, and it is the opinion of experts and those having the operations in charge, that the sulphur removed by washing, together with that which passes off in the

process of cokeing, and which is a component part of the coal, will be sufficient to bring it up to standard in this respect.

OPINIONS OF THE ATTORNEY-GENERAL AS TO PARTS OF THE MINING LAW.

During the year the department has had occasion to ask the Attorney-General for his opinion as to the construction to be placed upon certain parts of the mining law, and his replies are deemed of sufficient interest to be here inserted. The first is in connection with the enjoining of a mine (by the inspectors) from working more than ten men when it is being done in violation of certain restrictions provided by the statute, and is in reply to the following query: "Does the prohibition, in section 303, against working or operating such mine, with more than ten men at once, permit the employment of ten men by day and ten by night in such mine?"

To this the Hon. J. A. Kohler, Attorney-General, replies:

"The prohibition in this section extends to the number of workmen employed not more than ten can be worked at once in such mine, but I see nothing in the section that would prohibit the employment of not exceeding ten men during the night as well as during the day. If, therefore, a force of not exceeding ten men are employed during the day and another force of not exceeding ten men are employed during the night I cannot say that such employment would be prohibited by the language of this section. The prohibition, as it reads, applies to the number of men and not to the number of hours."

The second opinion of the Attorney-General refers to the employment, under the statute, (Section 301) of trappers or attendants, at doors which may be hung so as to mechanically open or close themselves, and is as follows:

"My conclusion is that the law requiring the attendant to be present to open and close the doors was framed with the idea that such attendant was necessary. It is a fundamental principle that the law does not require the doing of a vain thing. Where, therefore, the doors of a mine, by aid of mechanical appliances, are so hung as to open and close with as much certainty and security as if done by the hand of an attendant, I am of the opinion that the spirit of the law is fulfilled, but such contrivance should be of a nature that it can be said that it is as reliable and certain in opening and closing of the doors as if there were an attendant constantly present to perform that duty."

"In regard to your second question my judgment is that the language of Section 301, Revised Statutes, contemplates all doors used in assisting or directing ventilation of a mine and also all main door or doors in the main entry. Of course doors used in assisting or directing ventilation in a mine should be so hung that they will stand closed, and, as the law requires, cannot stand open."

LEGISLATION RECOMMENDED.

The attention of the General Assembly is respectfully called to some needed changes in the present mining law. Chief among these is the necessity for an increased inspecting force. The state is at present

divided into three mining districts, with an inspector in each, whose duty it is to visit and inspect the mines of his district as often as possible, and to test the accuracy of the mine scales whenever requested to do so.

This latter duty interferes very greatly with his efficiency in inspecting the mines, as too much of his time is taken up in transporting his weights from place to place. The weights go astray, or are delayed in transit by railroad, and he has to hunt them up or wait for their arrival. This is slow work, and days are often wasted in going from one mine to another (frequently at the extremities of his district) to inspect the scales, at the request of the miners, while there may be mines urgently needing his attention in the equally important respects of ventilation and general security. Apart from this, however, experience has shown that the districts, as at present constituted, are too large for proper and effective inspection by one man. This is particularly the case in the Second and Third Districts. The mines in these districts are not only numerous, but they are more scattered than in the First District, and, in consequence, more time is consumed in going from one to another in them than is the case in the First District. The mines in the latter district are located generally near Nelsonville, Jackson, Ironton and Pomeroy, and a visit to either of these towns places the inspector in close proximity to a large number of mines, which can all be inspected while there. This is not the case in the other two districts, except in Perry county, in the Second District. Here the mines are congregated together near Straitsville, Shawnee and Corning, but the outlying parts of the county contain numerous mines that are wide apart, and between which much time is necessarily consumed in traveling.

The number of mines, large and small, (and of miners employed) in the different districts is as follows :

First District	185 mines.	9,738 miners.
Second District	345 mines.	4,426 miners.
Third District	199 mines.	4,713 miners.

Attention was called, in the last two reports of this department, to the necessity of some provision by which the smaller mines of the state might be brought under direct control of the department. The arguments in favor of this change were fully given in those reports and the conclusion was reached that "they should be under the control of the mine inspectors, but not subject to the provisions of the entire mining law", and it was suggested that Section 306, as it now reads, be stricken out, and in its place a provision be inserted giving the Chief Inspector authority in these mines, "to direct and enforce any regulations in accordance with the provisions of this chapter that he deem necessary for

the safety of the health and lives of the miners." In view of the large amount of work devolving upon the present inspecting force, and the want of jurisdiction over the smaller mines, I now recommend that these mines be brought under departmental control as above suggested, and that the state be divided into four mining districts, with a district inspector for each district, instead of three districts, as is at present the case.

By Section 293 the Chief Inspector is required to collect statistics of the annual production of coal, iron ore, limestone, fire clay, or other mineral mined in the state. In gathering statistics of the product of limestone it is found that much of it is dug for building purposes. There is a large and important industry in the state that produces building stone other than limestone. The record of limestone product trenches upon this industry, but the statistics given are incomplete (as to stone dug for building purposes) without including stone other than limestone. Statistics of the latter product cannot but be interesting to those in the trade, and valuable as showing the resources of the state, while their collection would make the record of the department properly complete. I therefore recommend that building stone be added to the list of statistical information to be collected, subject to the same provisions as are now made for mineral product.

I also recommend that it be expressly stipulated in the law that in no case shall an air shaft, with a ventilating furnace at the bottom, be construed to be an escapement shaft. It needs no argument to prove the utter uselessness of such a way of escape from a mine, in the event of an accident closing escape by way of the hoisting shaft, but the law, as it now stands, is not sufficiently clear on the subject. In this connection it would also be well to provide for a right of way *underground*, in Section 297, where it reads, "in case a coal mine has but one shaft, slope, or drift for the ingress or egress of the men working therein, and the owner thereof does not own suitable surface ground for another opening, he may select and appropriate any adjoining land for that purpose," etc. In the opinion of Attorney-General Kohler this section, as it now reads, only gives a surface right of way, which, without the right of way *underground*, from the mine workings to the point selected for an escapement shaft on adjoining land, nullifies the intent of the statute in this respect.

Section 298 provides that breakthroughs shall be made every sixty feet. This distance is right and proper in some mining districts in the state, but is entirely unnecessary and burdensome in other districts. Instances have come under the notice of the inspectors where the roof of the mine has been so tender that the enforcement of this provision

would result in weakening and endangering the workings and safety of the mine and miners, by removing the coal in these breakthroughs so close together, and thus lessening the support of the superincumbent stratum. The ultimate result of this would be a creep, or squeeze, from which the ventilation of the mine would suffer more than it would from driving breakthroughs further apart, and it would endanger the lives of the men working in the mine, and might end in an entire loss of the mine to the owner. In the large veins of the state it is not necessary to have the breakthroughs so close together in order to supply the amount of air required by law. Yet the inspector has no discretion in the premises, and must simply enforce the law, though it be unnecessary and, in some cases, absolutely dangerous. I recommend that this section be amended to read, "breakthroughs, or airways, shall be made in every working place in the mine, at such distances as in the judgment of the inspector may be requisite, not more than forty nor less than twenty yards apart." I would also suggest that a clause be inserted in the law giving the inspectors permission to use a sound discretion in the enforcement of the provisions of the law. Many of its present provisions do not apply to all mines, and some of them are, in some cases, actually injurious, yet no deviation from the letter of the law is allowed the inspector.

Section 302 should be amended so as to confer power upon the inspector, where doubt exists as to the age of any minor found working in any mine, to qualify the said minor, or his parents, as to his age. Boys that are evidently under twelve years of age are often found working in the mines. The small stipend earned by them is of sufficient value in their eyes, and the eyes of their parents, to warrant them in making false statements to the inspector as regards their ages, and the inspector has no recourse but to accept their words. Much complaint exists among miners as to the employment of boys under the required age, and the inspectors are anxious to carry out the law in this respect, but, being without the means of reaching the facts in these cases, they are powerless to prevent the evil.

Lastly, I suggest that the words "with more than ten miners at once" be stricken from Section 303, and in support of the change quote from my last report, as follows:

"As will be noticed, this section simply allows an operator, who does not desire, or intend, to carry out the instructions of the inspectors, to reduce his force to ten men and avoid the penalty. In other words, however dangerous a mine may be, the law permits the lives of *ten* men to be imperiled without any responsibility being incurred by those to whose care it consigns them. I suggest that the words "more than ten men" be stricken from Section 303. I am happy to be able to state that it is extremely seldom that recourse has had to be made by the department to the pro-

visions of this section. Were the change made as suggested, it is probable that its enforcement would *never* be necessary. As it now stands, it simply affords a loophole for escape from compliance with the law. In Muskingum county an effort was made, in winter time when the trade was good, to improve the condition of such of the mines as were employing more than ten men. They reduced their force and the mines continued in the same condition. In other cases ten men have been worked by day and ten by night, making a force of twenty men, while avoiding a compliance with the law. The mines of the state generally are in excellent condition, and a cheerful readiness on the part of operators and owners to comply with the requirements of the law has characterized most of their transactions with the department. Nevertheless, there are a very few mines in the state that are working as commercial mines, but employing less than ten men, which are to-day in extremely dangerous condition and liable to an accident at any moment, whereby every man in the mine at the time must infallibly be lost. It is these cases that would be reached by the proposed change in this section, and there are no others that the change would affect in any way."

FAN VENTILATION.

Mechanical methods of ventilation have been employed in mines, to a greater or less extent, for more than two hundred years. Fans were in use in Germany in the seventeenth century, but it is only within the last thirty years that centrifugal ventilation has been before the public in such shape as to conform to the requirements of modern mining. James Naysmith, a Scotch engineer, built a fan, and used it in mine ventilation sometime during the first half of the present century. I have been unable to discover the exact date of this occurrence, but believe it to have been prior to 1849, in which year Brunton exhibited drawings, and explained the workings of a centrifugal fan of his own designing, to a committee of the House of Lords. In 1861 Mr. Atkinson described, to the North of England Institute of Mining Engineers, a centrifugal fan then in operation, and bore his testimony to the vast superiority of this method of ventilation over any other then in use. At about this time, or perhaps a little later, fans began to be used among the anthracite mines of Pennsylvania. The adoption of this mode of ventilation has since been rapid, and the results have proven the wisdom of the change. Wherever the centrifugal fan has been once used, a return to the furnace as a means of ventilation has seldom, if ever, been noticed.

ADVANTAGES OF THE FAN.

Ventilating fans, with engine, are now built and sold at so near the cost of a first-class furnace that it is unnecessary to consider the item of first cost when comparing the relative merits of the fan and furnace. In fact it will be found that a furnace equal to the *full* capacity of a fan of any given size would cost as much, or more than the fan would. It

is generally conceded that the fan is the more economical in shallow mines, but what it loses in point of economy in deep mines is more than counterbalanced by the danger from the furnace in such mines, which as a rule produce more explosive gas than the shallower ones. So far as the mines of Ohio are concerned (and in fact the coal mines so far as developed in the United States), there are none that can be properly termed "deep." Admitting this to be the case, we may proceed to consider the advantages of the fan over the furnace without reference to the depth of the mine as a factor in the calculation.

In the matter of expense attending the cost of running, the fan has a decided advantage over the furnace. In most shaft mines the air shaft is so located that steam can be carried to the fan from the hoisting boilers, and the employment of a special attendant may be dispensed with. The steam pressure upon the fan engine can be regulated, or if desired a governor can be placed upon the engine, and the fan will run along without attention, other than the ordinary lubricating, which can be attended to by the fireman at the hoisting boilers, at no extra expense to the operator. In such cases the coal consumed in running the fan becomes merely nominal, and is hardly appreciable in the general expense. Should the location of the fan be such as to render necessary the employment of a special boiler and attendant, the fan still has the advantage of the furnace in the cost of coal. What this cost may be in our own state, in the absence of any tests made, cannot be given with any certainty. Experiments made in Scotland show the amount of coal required to obtain a given volume of air to be in the following ratio:

By steam jet.....	1,000
By furnace.....	350
By open running fans.....	150
By Guibal principle.....	120

From this table it is evident that the economy in cost of coal alone over the furnace is more than sufficient to warrant the change from it to the fan, and it must also be remembered that these figures relate to fans supplied with steam from boilers of their own and not from hoisting boilers, so that the full complement of coal required to run them under any circumstances entered into the calculation. The experience of the Hollingwood pits, in England, will answer to demonstrate the saving in ordinary running expenses in that country, and may be considered generally applicable to similar cases elsewhere. These pits were ventilated by two furnaces of 12.63-horse power, moving 78,588 cubic feet of air per minute through the mine. A Guibal fan was erected to

take the place of the two furnaces which, at sixty revolutions per minute, moved 106,680 cubic feet of air in the same time. The difference in favor of the fan was found to be as follows:

Cubic feet of air per minute, increase.....	28,092
Pressure in pounds per square foot, increase.....	9,256
Horse-power in air (including shaft friction), increase.....	34.43
Cost of fuel and wages in 24 hours, decrease.....	\$5.11
Cost of horse-power in air, for 24 hours, decrease.....	.70
Pounds of coal per horse-power of air, per hour, decrease.....	.39

and the amount saved in one year by the fan was \$2,120.65. The size of this fan is not given, nor does it affect the fact that an increased capacity, with a corresponding decrease in cost, accompanied its substitution for the two furnaces.

The saving in the running expense of the fan is by no means the most important advantage it possesses. It is the part of good mine management to have a surplus of ventilating power on hand at all times, to be used in case of emergency. A furnace may be largely in excess of the demands upon it when erected, but the gradual development of the mine will eventually come up to, and even exceed, its capacity. Nothing then remains but to tear out and enlarge the furnace. Should occasion require an increased ventilation, and the furnace capacity admit of it, it can only be had by increasing the fire area, a slow process even where all that is required is to make more fire, or spread it over idle grate bars. The fan always possesses a reserve of power, which can be brought out and utilized instantly by simply giving it more steam and increasing its speed, and, as a general rule, it may be said that the capacity of the fan for passing air is only limited by the size of the mine air courses, because of its possibilities by the increase of speed.

The furnace is affected in its operations by changes in the temperature of the atmosphere on the surface, which sometimes are sudden and extreme, and the air current must vacillate in accordance with these changes. The furnace requires constant attention on the part of the fireman, who is much of his time in the foul air collected from all parts of the mine, and his energies cannot but be affected at times from this cause. The momentum of a body of air in motion assists the motive power to a great extent. With the furnace the velocity and amount of air obtained depends upon the attention of the fireman to his duties, and should he neglect them the velocity decreases, and the amount passing is lessened, causing an expenditure of more power, and a delay in bringing the body of air back to its original volume and speed, while the men employed in the mine suffer the consequence of his neglect. The fan is subject to none of these fluctuations. It is not

directly affected by atmospheric changes, nor does the volume of its current vary or its speed change, but a steady and constant stream of air flows through the air courses, subject only to the regulation of its revolutions.

Where a fan is in use the air shaft, not having to carry off the gases from a furnace fire, with a ladder or stairway in it, is always open, and affords a sure and quick means of escape for the mines in the event of a sudden explosion of gas, or influx of water. If the fan be reversible (and all fans should be) its motion could, in case of fire among the buildings on top of the downcast, in a few minutes be reversed, and the stythe from the fire be expelled from, instead of being drawn into the mine passages to the suffocation of the men met in its course. In the writer's experience, after an explosion of gas, forty men were brought out unconscious from the effects of the after-damp, and four others were dead when found. Had the fan been reversible it is believed that this calamity would not have been so great, and might have been altogether avoided. In fiery mines danger exists from the gas coming in contact with the fire of the furnace, and causing an explosion. Even in Ohio, whose mines are most singularly free from fire-damp, Mr. Roy, in his report for 1874, mentions an explosion in Rush Run shaft, Jefferson county, and says: "so abundantly had the fire-damp accumulated that it returned to the furnace undiluted by the fresh, newly introduced air, and in passing over the fire exploded with great force, dashing out the wood work of the shaft, and throwing it out of the pit's mouth. The earth shook with the force of the explosion. The mine was set on fire, and descent was made impossible," etc. It is to be presumed that in this case the furnace was destroyed, as Mr. Roy states that other means of ventilation had to be resorted to before the mine could be entered, and the regular ventilation be resumed. An accident from this cause could not have occurred had a fan been in use at this shaft. Had as violent an explosion occurred from other causes, the fan could have been so placed as to have been safe from the shock, and even had it been injured it could have been reached and repaired, and when ready could have been started, and the managers could have followed the current of fresh air from the downcast, erecting brattices and stoppings where necessary, and bringing the ventilation back to its original course and condition in comparative safety, and in much less time than if they had to grope about, in the dark as to what course the air might take at the next hole, or where they might suddenly enter upon another accumulation of gas, or after-damp, as the case might be. The length of this paper will not permit further arguments in favor of the fan,

and while all its merits have by no means been enumerated we will pass to the consideration of

THE GUIBAL FAN.

There are several different styles of fans, each of which have their advocates. Practice and the general opinion of mining engineers has, however, given fans of the Guibal type the preference, and the majority of those now in operation are of this class. They are simple in construction and not liable to get out of order, and practically from 60 to 65 per cent. of the power generated to run them is utilized in ventilating, the balance being consumed in overcoming the friction and in covering losses by leakage, etc. The Guibal fan proper consists of a number of vanes, inclining backwards and attached to a shaft, which revolve in a spiral casing, receiving the air through open spaces in the sides, and discharging it through an opening in the periphery, by way of an expanding chimney. The discharge opening is furnished with a shutter, by which its area can be increased or lessened, as circumstances may require. This fan, with modifications to suit the views of engineers or builders, is the one in general use at present. The different views of engineers relate to details of construction in the angle of the vanes, size of openings, character of chimney, length of spiral, open or closed casing, etc. The idea is advanced by some that a casing entirely open in its periphery is the best, as it permits of the free discharge of the air at all points. Others prefer a chimney of constant area instead of an expanding one. Mr. Dan'l Murgue, a French engineer, has made numerous experiments with a view of discovering the best practical form, and relative size of the parts, of a centrifugal fan. His conclusion is that the Guibal fan is superior to all others. In his researches he collected data of the size, shape, and effective results of 58 fans of different types and construction. The following table gives the comparative useful results of these fans:

For ventilators without cover.....	.327
Covered, and without chimney .....	.560
Covered, and with rectangular chimney.....	.606
Covered, and with expanding chimney.....	.650

and he adds, "the approximate manometric results in our table permit us to estimate at .750 the actual manometrical yield of a well-made Guibal machine." This would indicate that in such a fan only twenty-five per cent. of the power applied is lost to the purpose of ventilation. M. Guibal himself claims for his fan,

Without casing, a useful effect of.....	22 per cent.
With casing, a useful effect of.....	31 per cent.
With casing, and expanding chimney.....	57 per cent.
With casing, and shutter adjusted.....	61 per cent.

It will be noticed in the above a claim is made of twenty-six per cent. for a fan with expanding chimney over one without, and this is further increased four per cent. by the use of the adjustable shutter.

FAULTY CONSTRUCTION OF SOME FANS.

The introduction of fans as ventilators in mines west of the Alleghenies has been of recent date, and the results in many cases have not proved to be what was expected by their builders. Hence we sometimes hear it said that the furnace did better than the fan that has taken its place. These fans have been mostly constructed on ideas of manufacturers who have no practical knowledge of the requirements in mine ventilation and follow only their own crude notions. In fact but few of the fans in use in Ohio are constructed with any regard to the principles involved, or to the rules governing centrifugal ventilators. Many of them display an utter absence of knowledge of even the rudiments of atmospheric laws. A fan, made by the bank boss, came under my notice, in which the arms of the spider were made of 4 by 4 scantling. This fan answered the purposes of the mine, but the maker never noticed that the arms (one on each side for every vane) nearly closed the inlet to the fan by reason of their thickness. Another was set directly in the mouth of the air shaft, closing up and lessening the capacity of the air course by nearly two-thirds. Many fans are sent out from the shop with directions and drawings showing how the wooden casing should be built around them. This casing is built by a carpenter, perhaps entirely competent in his line, but with no knowledge of what a fan should be. The result is faulty construction and imperfect work in the ventilator. Wooden casings are to be condemned in any case, as they are liable to warp and crack, causing leakage and great waste of power, but when to this is added the blunders of construction in the hands of an incompetent person, it is simply wonderful that any better results are obtained than were got by the furnace. Of these cases I have noticed one in which the carpenter had put the side of the casing at least four inches from the blades, thus giving ample room on the inside for a current counter to the blades, and while increasing the friction and power required to run the fan, decreasing in a serious degree its effective service. Another had the discharge opening too wide, allowing an in-draft against the blades. Complaint was made that the fan was not

doing as well as the furnace. Closing the discharge about one-half increased the current 3,600 feet per minute. But in this case the fan was actually discharging downward, or towards the ground. Discharging rarified air downward against the more dense air of the surface! Throwing a cork into water and expecting it to sink! Yet all these cases followed the instructions for making the casing, sent with the fan. Fans are made with the intake on the one side only. A clear infraction of the first principles of their construction. The revolution of the vanes causes a vacuum into which the air rushes from the mine. If one side of the fan be closed it destroys the usefulness of nearly one-half its area, and a conical body of stagnant air stands upon the closed side, obstructing the passage of the incoming air and acting as a drag upon the vanes; for the air rushing in from the open side is caught up by the vanes and passed out at the discharge before it can penetrate to the other side of the casing. Again, fans are made without the spiral in the casing, which all conversant with the matter know to be of the highest importance to their economical working. Others are made with the spiral and intended to be reversible. These fans stand over the air shaft and when used as an exhaust the air is discharged upward through an opening in the front of the casing. If it is desired to reverse the current this discharge hole is closed and another, on the bottom directly over the shaft, is opened. By a system of doors the air then passes into the fan from the surface and is forced down the air shaft. Yet these fans do not work equally well either way. The cause is to be found in the spiral, which from being in other cases beneficial is in the present harmful. The spiral is made by commencing at some point a distance from the discharge and gradually enlarging the diameter of the casing until it is widest at the discharging point. This allows for the compression of the air by the vanes and facilitates its passage to the outlet. But in the fans under consideration the casing is immovable, and when one discharge hole is closed and another opened the casing is widest where it should be the narrowest, and the beneficial effects of the spiral, when discharging at one of the openings are entirely lost and the whole internal economy of the casing is revolutionized in the attempt to reverse the action. These fans work best when discharging at the hole where the spiral is widest, and for this reason they are found to work one way better than another, as the case may be. In the west most mine managers desire a reversible fan, and the only way by which a fan of this type can be reversed, preserving its lines and proportions without waste of power and decrease in capacity, is by reversing the casing and leaving the vanes to run in the same direction whether acting as an exhaust or as a forcer.

UPCAST AND DOWNCAST FANS.

Authorities differ as to the relative merits of the exhaust and forcing fan. It is maintained by some that the rarified air passing out of the exhaust, or upcast fan, assists, by its lesser specific gravity, and by its velocity, the action of the fan; others claim that a loss of power results from the same cause, in that the rarified air is projected at great velocity against the denser atmosphere of the surface. The latter argument does not avail, however, where the expanding chimney is used with the fan, as will be noticed further on. Hopton, in his "Conversations on Mines", gives his opinion that the volume of air produced by an upcast and downcast would be equal, but claims there is more danger in fiery mines with the upcast. He says that were an airway suddenly closed up, by a fall or other cause, the action of the upcast would be to exhaust the air and relieve the pressure upon the pent up gas, allowing it freer vent whereby an explosion might occur. Whereas, were a downcast fan employed it would continue to force air into the mine and thus, by increasing the pressure, prevent the escape of gas. The weight of this argument would seem to depend upon which side of the fall the most gas existed.

One benefit to be derived from the downcast in shaft mines is that in winter time the warm air from the mine ascending the hoisting shaft serves to keep the guides and cages from freezing, and to this extent facilitates the hoisting operations at that season of the year. One very serious objection to the downcast fan, however, is to be found in the fact that the return air of the mine is carried out by way of the entries, or most traveled routes, to the detriment of men and teams using the same, and in fiery mines the gas collected by the air currents, and passing this way and up the hoisting shaft, would increase the danger from explosion. Much can be said in favor of either plan, but it is questionable whether a satisfactory decision can be reached on the subject. The fact remains, however, that most fans in operation are upcasts. Especially is this the case among the gaseous mines of the anthracite region, where the upcast is used entirely. The same is true of English mines and those of this continent, and it is well to remember in this connection that these mines require larger bodies of air than our western mines; their fans vary in size from 20 to 50 feet in diameter, moving as high as 250,000 cubic feet of air per minute. Their casings are built up around them in solid masonry, and the cost of the fan and its equipment is often more than would suffice to open and put in good running order any of our western mines.

REQUISITES FOR GOOD RESULTS.

Before considering the form and proportions of a good fan it will be well to glance at some conditions requisite to insure its perfect working and develop its full power. The size and character of the airways have much to do with the successful working of the fan. If the air passages are too small to admit of a quantity of air passing to the fan that will equal its capacity a loss of volume must ensue, and consequently a waste of power and an unnecessary wear and tear. In other words the result would not be up to what the expenditure of power would warrant. This could be obviated by lessening the speed of the fan, but in that case the ventilation might not be equal to the mine requirements. For this reason the same fan may not work as well at one mine as it would at another, simply because it cannot develop its capacity, where the intake is throttled by narrow airways, or the friction is increased by their crookedness and by obstructions that have accumulated in them. In fact an inferior fan with favorable surroundings may sometimes do better than a perfect one with these difficulties to contend against.

The volume of air delivered by a fan varies as the speed of the tips of the vanes, the vacuum, depression, or water gauge, as the square of this speed. Yet where the air passages are too small for the fan we find the anomaly of an increased speed accompanied by a decreased volume. This is because the fan has not work enough to do; is not receiving air enough for its capacity, and much of the air received by it is revolving uselessly in the fan. Its power being thus in excess of air delivered to it, the speed is increased without a corresponding increase in volume. Again, were the air from the mine suddenly cut off from a fan and the surface air freely admitted to it, the speed would decrease but the volume would increase, for the reason that the fan would then have an inflow of air in excess of its capacity sufficient to lessen its speed, but would at the same time be working to its full capacity *at that speed*. Hence a full flow of air to the fan insures the maximum volume with the minimum speed. The airway leading to the fan should not be less in area than the combined area of the inlets to the fan; and if made one-fourth larger the effect would be beneficial in reducing the velocity of the upcast current and lessening the friction to be overcome. An instance is given, on good authority, where a fan running at the one speed increased its volume from 23,000 to 60,000 feet per minute when the airways were enlarged.

On the other hand a poorly designed fan, or one of faulty construction and proportions, may sometimes prove detrimental to ventilation

because of its own inability to pass the quantity of air delivered to it by the air courses.

A fan should not be placed immediately over the air shaft. It should properly be at one side of the shaft, so that when acting as an upcast no impediment is offered to the free egress of the air from the mine to the full capacity of the shaft, and yet close enough to it so that when the casing is reversed and the fan is to run as a downcast, the mouth of the discharge opening shall come exactly over the mouth of the shaft. If, however, the conditions require the fan to be directly over the shaft, it should be placed at such a height above the shaft as not to interfere with the current flowing from the mine, and the connection between the mouth of the shaft and the fan inlets should be of somewhat larger area than the shaft itself.

In the case of an upcast fan, any obstruction in front of the outlet will retard the projection of the air and lessen the capacity of the fan. High winds blowing against the discharge of an upcast fan will also obstruct the current, even when the expanding chimney is used, and care should be taken to have the discharge outlet so located that surrounding buildings, or the topography of the land, be not such as will direct the atmospheric currents toward it. To sum up, the conditions for successful working are a sufficient area and clear passage for the air from the mine, and an unobstructed discharge from the fan.

PROPER CONSTRUCTION OF THE FAN.

The coal mines of the west do not require such large fans as are used in the anthracite mines, or in the mines of Europe, but they require them to be reversible readily and to work equally well as an upcast or downcast. A fan of ten feet in diameter, properly constructed and under favorable conditions for developing its capacity, will be amply sufficient for the requirements of almost any of these mines. In constructing a fan, however, it is well to consider the future needs of the mine consequent upon its development, and to bear in mind the fact that an increase in diameter adds but little to the first cost and increases its capacity as the square of the diameter. That is to say, that the comparative difference between the capacity of an eight-foot fan and a ten-foot one would be as 64 is to 100. A fan properly should be constructed to conform to the special circumstances and conditions of the mine to which it is to be applied. This involves more or less experiment, which is expensive and which, in the hands of one not fully conversant with the subject, would as likely prove detrimental as serviceable to the object in view. A general form of fan, correct in its propor-

tions, and capable of being made to conform so closely to the varying conditions of different mines as to practically meet the needs of any one of them, would suit the views of mine owners and would take the place of many designs now in use, some of which are built by rule of thumb and whose strongest recommendation is that they are cheap.

We will now consider the form, proportions, and details of such a fan. In the first place, the fan should be entirely of iron, the casing and vanes of sheet iron, the former heavy enough to secure stability, and the latter light enough to be easily moved, with due regard to strength. Apart from the fact that a wooden casing is not readily reversible, it is liable to shrink and crack, causing it to leak, and thus not only to decrease the effective work of the fan, but also to cause a waste of power and an increase in wear and tear. An iron casing, made at the factory, comes to the mine in its proper shape and proportions and is not dependant upon the knowledge of a carpenter to set up properly. All that is necessary is to have the fan shaft in the center of the inlet and its lines and proportions are secured. Wooden vanes are also liable to warp and crack, the shrinkage throwing them out of line and the cracks permitting air to pass through them, both of which militate against perfect work, while the vanes, being necessarily thicker than if made of iron, take up that much more room that should be occupied by air. The power required to drive a fan is, first, that needed to overcome the friction and run the machine; and secondly, that necessary to move the volume of air with the required velocity. Hence, the less friction we have to overcome the more power we have to apply to ventilation. For this reason the fan wheel should be light and the thickness of the shaft as small as possible consistent with safety. The journals should be long and kept in true line with each other. The engine should be connected directly with the fan shaft. Much extra friction is caused by an engine working on a separate shaft, which is further increased by the weight of the belt and belt pulleys, and a fan run with a belt can not work as well as with a direct acting engine, as the belt will slip more or less, causing a loss in the fan economy. The casing should be made in a spiral form—that is to say, that the tips of the vanes should run close to the rim of the casing for a certain distance and then the rim should gradually leave the tips until, at the outlet, the casings should be farthest from the vanes. Opinions differ as to where this spiral, or eccentricity, should commence. Some think that it should comprise the whole circumference of the casing, others three-fourths, while others again hold that one-half is sufficient. My own opinion, based upon both experiment and practice, is that the best

results are obtained by carrying the periphery of the casing close to the vanes up to a point opposite the lowest part of the fan (I refer to the fan when standing in position as an upcast) and there commencing the enlargement and carrying it gradually, in an ever-widening spiral, until it reaches the discharge outlet, where the casing should be a distance from the tips of the vanes equal to one-tenth the diameter of the fan. The spiral is intended to allow gradually increasing room for the increased compression of the air, and to facilitate its passage to the discharge by enlarging the avenue of exit. If it be too short thumping will occur, caused by the air jumping from one vane back to another, owing to lack of room for its movement. When this thumping is heard in a fan it will be safe to extend the spiral further back from the outlet. From what has been said it can now readily be seen that if a fan with a spiral casing be reversed by simply closing the exhaust opening and opening another over and into the shaft, in the expectation of as useful effect as a downcast, it cannot possibly be the case, because we then subvert the whole interior lines of the casing and have the vanes revolving in an irregular almost egg-shaped box, in entire disregard of all rules. Hence, the only proper way to reverse a fan and preserve its economy is to turn the casing over and place the mouth of the discharge in connection with the mouth of the shaft. This cannot be as readily done with a wooden as with an iron casing, because the wooden casing is too cumbersome, and must be fast to the ground to insure stability. The sides of the casing should stand as close to the sides of the vanes as possible, so that no useless air may encumber the operations, or be a drag upon the machine.

The vanes may be of any number, sufficient for their purpose, but if numerous they will be found to guide the air better and shake less than where fewer are used. Eight vanes will be the proper number for a fan such as we are describing. Much discussion has been had by mining engineers over the angle at which they should stand, and they have been set straight, inclining backward, curved backward, and inclining backward with the tips curved forward. It would seem that vanes inclining backward would necessarily be larger and heavier than straight blades, and to this extent would certainly increase the friction, while a blade with a forward curve on the tip would prevent the air from leaving the vane freely, as an upturned edge on a shovel would hinder material being thrown from it. Mr. Murgue, before referred to, after a series of experiments, extending over years, gives his opinion that the best form of vane is one that "begins at the circumference of the inlet with an inclination to enable it to receive the air without shock, extending upward

with a gentle curve, and ending in a line following the radius." That is to say, a straight blade curved at the bottom in the direction in which the fan runs. In support of the straight blade it may be said that in the early Guibal fans the vanes inclined backward, but subsequently the inventor himself adopted the straight blade in preference.

As to the width of the vanes, it is found that any increase beyond a certain point is productive of no benefit, and is a waste of power. Where this point is can only be determined by experiment, but it is a fact that most of our fans are wider in the vane than necessary, and would produce the same results if narrower. Experience teaches that a width equal to one-fourth the diameter of the fan will generally be found most suitable, while the length is regulated by the size of the inlet, which *should be one-half the fan diameter*, and, as the vanes should not extend beyond the circumference of the inlet, their length will necessarily be one-fourth the fan diameter, or, in other words, the vanes should be square.

The size of the inlet, I have said above, should be one-half the diameter of the fan. What the *exact* size of this opening should be has never yet been determined by experiment, and most European fans have inlets of rather less diameter than given above, but in the construction of a fan for general service it will be found that the above size will meet all requirements where the shutter, yet to be noticed, is used.

The exact size of the outlet can only be determined by experiment, as it depends greatly upon the thickness of the seam worked and the size of the airways. It should be large for thick veins and high airways, and smaller for thin seams where the airways are lower. It should be regulated to the capacity of the fan, and the width and eccentricity of the casing, as well as the size of the inlet, have bearing upon this question. If the outlet be too large air re-enters the fan in a sort of back current, such as is sometimes noticed near the sides of swift-flowing streams of water. In such cases small pieces of paper may be dropped into the fan at the sides of the outlet, even when the fan is running at high speed. This counter current of air is again taken up and expelled, and continues in this motion to the loss of power that should otherwise be utilized. Again, should the outlet be too small a waste of power is met with in the resistance it offers to the free passage of the air, which is retained and churned in the fan uselessly. To obviate all this difficulty we make the outlet larger than absolutely necessary and adopt the shutter, a door, or gate, of sheet iron, sliding up and down in a groove, over the discharge outlet. Experiment and practice have proven the highly useful results obtained from this contrivance. By moving it up

or down we can vary the size of the outlet to suit the speed of the fan and size of the airways, and, after experimenting to determine the point at which the best results are obtained, it can be adjusted to remain in that position as long as desired. And in this connection it may be said that when the fan vibrates the shutter should be regulated till the vibration stops. This vibration, however, must not be confounded with the pounding, before noticed, caused by a too short spiral. The position of the shutter may need changing to suit the various conditions of the mine, and should be carefully watched by the boss until he can from experience tell where to place it to obtain the best results in any case. This addition to the fan is found in few, if any, of those used in Ohio. As showing the effect of a change in the size of the outlet by moving the shutter, experiments at the Earnock colliery, in Scotland, gave results as follows: With the area of discharge opening forty-nine square feet the fan, at twenty revolutions, gave 69,400 feet per minute; at thirty-one revolutions, gave 115,500 feet per minute; at forty revolutions, 113,700 feet; at fifty-two revolutions, gave 187,300 feet per minute. With the area of discharge opening forty-one and a half square feet the fan gave, at twenty revolutions, 76,000 feet per minute; at thirty-one revolutions, 127,900 feet per minute; at forty revolutions, 160,900 feet per minute; at fifty revolutions, 198,500 feet per minute. With the area of discharge opening thirty-one square feet the fan gave, at twenty revolutions, 69,700 feet per minute; at thirty revolutions, 112,800 feet per minute; at forty revolutions, 135,800 feet per minute; at fifty revolutions, 175,600 feet per minute. Showing that the largest volume of air was got when the area of the outlet was forty-one and a half square feet. A 16-foot Guibal fan in the county of Durham, England, running at a regular speed of sixty revolutions per minute, showed variations in volume, with the shutter in different positions, as follows: Shutter raised one foot and three inches, the volume was 18,000 feet per minute; shutter raised three feet and six inches, the volume was 23,000 feet per minute; shutter raised 1 foot and nine inches, the volume was 39,000 feet per minute. In the first of these instances the fan was run at different speeds, and in the last at the same speed all the time, yet both results show the benefit of the shutter, and prove that it is possible by its use to find and retain the best size of outlet, and that the fans in our own mines can be regulated by it to conform to the conditions of any mine using them, and that in it we have the means by which the general form of fan considered above can be made to accommodate itself to the different requirements of different mines.

We next come to consider the expanding chimney. The theory of its action is that it affords an opportunity for the expelled air to ex-

pand, after leaving the fan, until its velocity is lost when it comes in contact with the denser air of the surface, at the top of the chimney, and it passes out without resistance from it. In fans without chimneys the rarified and lighter air of the mine is thrown with great velocity against the denser and heavier air of the surface, meeting with a resistance from it very detrimental to the perfect operation of the fan. The chimney should be of the same area at the bottom as the discharge outlet of the fan, and may be made of wood, with the joints well battened and made air-tight. It should commence expanding and increasing in area at once from this point to the top. The rate of expansion, and the height, should conform to circumstances, and no general rule governs the matter. It is unnecessary to have it too high, and yet it should be high enough to allow the air to part with its velocity in its passage upward and pass out without resistance from the surrounding atmosphere.

That the chimney is of service in aiding the fan may be demonstrated by boring holes in its side, when it will be found that if a lighted lamp be placed at the holes, the flame will be drawn into the chimney through the holes. Mr. Murgue, as before noticed, has shown it to be of great advantage, and has also shown that even a chimney of constant area is of service, while Mr. Guibal himself claims an increase of 26 per cent. useful effect from its adoption. A chimney to a fan I have never seen west of the Alleghenies, yet I venture the assertion that if placed upon almost any upcast fan now in use, it would be found to largely increase the volume of air delivered, even where radical defects exist in the construction of the fan.

We have now considered the fan, as compared with the furnace, and have noticed some demerits of faulty construction. We have also considered the conditions necessary for good work, and the best form of fan for service in our western mines. We find from the inquiry that the two most important factors in the successful working of the fan, viz., the shutter and the chimney, have been entirely neglected by our fan-makers as well as by our mine managers. It is true that neither of these are needed in a fan constantly used as a downcast, but there can be no doubt that the adoption of one or both would very materially benefit the working, and increase the volume of any upcast fan now in use. The chimney can be built at little cost, and, where the fan construction will not admit of the addition of the shutter proper, its functions can be approximately secured by putting on and taking off boards over the discharge, measuring the air at each change until the best size is found and kept. Of the many errors of construction this of the size of the discharge is the most pernicious, and the oftenest met with. Other deficiencies can be overcome, or reduced, through the medium of

these two appliances, and their absence from any fans now in use, serves to demonstrate, in a striking manner, the lack of information existing among fan-makers, who follow generally the rules governing the construction of a blacksmith fan, or a hall ventilator, none of which are in any way applicable to mine ventilators. The mine managers of the west are rapidly taking advantage of, and adopting the most improved mine machinery, and it is to be hoped that this spirit of enterprise may soon reach out in the hitherto neglected direction of a perfect fan, and that those of proper construction may take the place of the many abortions now so common.

CONDITION OF LABOR DURING THE YEAR.

The Second Annual Joint Conference of Miners and Operators was held at Columbus, February 8, 1887. At this meeting the following scale was unanimously adopted as the scale upon which to base the new scale, from May 1, 1887, to May 1, 1888:

	Cents.		Cents.
Hocking.....	60	Mt. Olive.....	56½
Pennsylvania.....	69	Staunton	56½
Reynoldsville and Fairmount	65	Springfield	62½
Indiana block	80	Mattoon.....	75
Indiana bituminous.....	65	Minunk, Illinois	85
Wilmington, Illinois	95	Wenona, Illinois.....	90
Streator	80	Pana, Illinois	56½
Grape Creek.....	75	Lincoln, Illinois.....	62½
Laselle.....	90	Peoria and Canton Districts	70
Bloomington	95	Spring Valley.....	90

The National Committee to fix a scale of prices for the ensuing year were unable to agree, owing to the fact that in some districts governed by the scale (particularly in Central and Southern Illinois), the operators not belonging to the Inter-State organization were paying less than scale rates for mining, to the detriment of those who were in good faith carrying out the obligations of the Association. A committee, consisting of Messrs. McBride and Townsend, of Ohio, Campbell and Clark, of Illinois, were appointed to draft a compromise proposition, and submitted the following resolution, which was unanimously concurred in:

Resolved, That the price for mining be advanced 5 cents per ton from May 1 until November 1, 1887, and 5 cents more from November 1, 1887, to May 1, 1888.

The above shall not take effect until those districts named in the scale shall have complied with the provisions of such scale, or are idle by reason of failure to comply, it being hereby delegated to the Inter-State Board of Arbitration and Conciliation to declare when all districts named in the scale shall have complied substantially with its provisions. It shall be the duty of said Board to determine said question of compliance prior to May 15 next, and give notice thereof. Upon the first report of such compliance the advance shall take effect as of May 1, 1887.

Whereupon, after having been in session three days, the convention adjourned, to meet in Pittsburgh, on the first Tuesday in February, 1888.

Efforts, made by both operators and miners, to bring the outstanding districts within the scale adopted by the convention before May 1, were but partially successful. The joint board met, however, in Columbus, May 4, 1887, and issued the following official circular, which fully describes its action:

To the Miners and Operators of the United States and Territories:

At the meeting of the Joint Board of Arbitration and Conciliation, held at the Neil House, Columbus, Ohio, May 4, 1887, to decide upon the question of granting the advanced scale of prices for the ensuing year, the Operators of Ohio, Indiana, and Pennsylvania were a unit in granting advanced rates without any conditions; but objections were raised by the Operators in Illinois, on the ground that the provisions agreed upon had not been substantially complied with, and in order to more fully meet the conditions referred to, the following resolutions were unanimously agreed upon:

"*Resolved*, That the conditions of the scale as contemplated by the February convention, strictly construed, have not been substantially complied with, but so much progress has been made toward the fulfillment of its requirements, and the outlook for a full compliance at an early date being good, we deem it expedient and wise to grant additional time to the Miners to enable them to succeed in the establishment of prices mutually agreed upon, and hereby declare that the 5 cents per ton advance shall take effect May 1, 1887, and remain in force as originally intended, or until such times as some district named in the scale has failed to comply with its provisions, or the Miners or Mines of said district have resumed work at prices below those named for that district.

"*Resolved further*, That the Chairman of the Board, upon information that the scale prices are not being complied with, shall convene the Board at as early a date as possible, and the members of the Board shall even by a tie vote have power to declare the provisions of the scale non-effective."

To successfully consummate the true objects sought to be obtained by our Joint Board, we trust that both Miners and Operators will act in a spirit of fairness in carrying out the above agreement jointly entered into.

Very truly yours,

OSCAR TOWNSEND, *President*.

CHRIS. EVANS, *Secretary*.

May 6, 1887.

The Joint Board again met, at Chicago, May 18th, and issued the following circular:

To the Miners and Operators of the United States and Territories:

At the meeting of the Joint Board, held at Chicago, Illinois, May 18, 1887, the following resolution was agreed upon, the members of the Board from Illinois voting in the negative:

"*Resolved*, That the resolution passed at the meeting of the Board at Columbus, Ohio, May 4th, holds good during the month of May, but should the conditions of the scale, adopted at the Inter-State Convention, not be complied with, according to the interpretation of the Illinois Operators, by the 21st day of June next, the Board

shall meet and declare that all parties interested shall be relieved from their obligations."

After the passage of the above resolution, the Illinois members entered a protest against it, stating that it was unjust and unfair, because the conditions of the resolution under which said advance was to be paid had not been fulfilled. During the interval between May 18th and June 21st, it was deemed advisable by several members of the Inter-State Board to call a joint meeting of the members of the State Boards of Indiana, Ohio and Pennsylvania, prior to the meeting, June 21st, in order that the Inter-State Board might have a general understanding with the members of the State Boards before taking final action on the question, as it had become very complicated, and upon their decision rested the entire question as to whether the joint movement, that had given such satisfactory results during the past year, should continue, or whether it should be allowed to fall to pieces and re-enact the former mode of warfare to adjust differences.

As a result of the above conclusions, a conference of the State Boards was held, and the recommendations were of such a nature as to give entire satisfaction to the Inter-State Board, and the following was unanimously agreed upon:

WHEREAS, The Inter-State Board of Arbitration and Conciliation, at an adjourned meeting held at Indianapolis, Ind., June 21, 1887, having had under consideration the question of continuation or nullification of scale provisions, deem it wise and expedient to waive all other considerations and adopt the recommendations of the Operators' State Boards of Indiana, Ohio and Pennsylvania, which reads as follows:

In view of the fact that the condition, upon which an advance was authorized by the Columbus convention have not been complied with, we regard the base scale of 1887 devoid of any advance, as in force and binding upon both operators and miners; but in recognition of the efforts made by the miners to secure the advance, by bringing all districts up to the scale, and as a further evidence of our belief of the fundamental principle of our organization—"Arbitration and Conciliation,"—we are willing to declare an advance of 5 cents above the base scale as fixed at Columbus Convention of February 10th, 1887, for six months, viz., from May 1st, 1887, to November 1st, 1887; but, if on November 1st, 1887, the mining districts of Illinois are not paying the Columbus scale price for 1887, then the further advance of five cents shall not be granted; but the price from November 1st, 1887, to May 1st, 1888, shall remain the same as from May 1st, 1887, to November 1st, 1887.

The Board will meet again on or before the 15th day, in the month of November, 1887, to decide the question of a further advance of five cents per ton, in accordance with the above provisions.

Strenuous efforts were again put forth to bring about harmonious action in the districts still outstanding. These efforts were complicated, and somewhat retarded, by a conflict that arose between the Federation of Miners and Mine Laborers and D. A., No. 135, K of L. Notwithstanding the opposition of the latter, however, by the beginning of November the operators and miners of the districts under consideration had generally given in their adhesion to the Inter-State organization and, at a meeting of the National Board of Conciliation and Arbitration, held in Columbus, November 14th, the following resolution was adopted:

WHEREAS, At the meeting of the Inter-State Board of Arbitration and Conciliation, held at Indianapolis, Indiana, June 21, 1887, an advance of 5 cents per ton was

granted from May 1, 1887, to November 1, 1887, and a resolution was passed by which it was declared the further advance of 5 cents to take effect November 1, 1887, should not be paid unless the mining districts of Illinois were brought up to the Columbus scale; and

WHEREAS, The information before this board is that the effort to bring the price of mining in Illinois up to the scale has not proved entirely successful, the agreement to declare the further advance of 5 cents November 1 is not binding; however, the board, in recognition of the progress made in certain parts of Illinois in bringing the mining price up to the scale, and as an encouragement to future efforts in the same direction, and believing that if the further advance of 5 cents is declared in force as of November 1, it would tend to strengthen the organization which we desire to perpetuate; it is therefore

Resolved, That the strict fulfillment of the contract be waived and the advance of 5 cents per ton be paid from and after November 1, 1887, to May 1, 1888.

STRIKES, ETC.

As a result of the beneficial effects coming from the efforts of the Inter-State Association of Operators and Miners, and the good feeling engendered thereby, strikes during the year have been but few, and have been generally settled by arbitration while work went on.

About December 1, 1886, the miners of the Mahoning Valley struck for an advance of ten cents per ton in mining. On December 18th the leading operators and a committee of miners of the region met at Youngstown, and agreed to submit the question of an advance to a committee of arbitrators, and the men resumed work. This committee gave its decision, December 31st, in favor of the advance, said advance to commence from December 18th, the date of the agreement to arbitrate.

On January 12, 1887, the miners of the National and Fairview mines, near Washingtonville, struck for an advance of ten cents per ton. This question was also submitted to arbitration, and, on January 31st, the decision of the arbitrators was given that "the price of mining shall be advanced from eighty-two and a half cents per ton to eighty-seven cents per ton for coal screened over a three-quarter-inch screen—the price of mining to advance or decline with that of Hocking Valley, and a difference of twenty-seven cents to be maintained."

In the Tuscarawas Valley difficulties arose between the miners and operators as to the price of powder, and the price to be paid for what is known as "dead work." This question was also submitted to arbitrators, and the following was agreed upon:

JOINT AGREEMENT

OF MINERS AND OPERATORS OF TUSCARAWAS VALLEY, ADOPTED AT MASSILLON, OHIO,
JULY 5, 1887, TO TAKE EFFECT JULY 1, 1887.

1st. Standard thickness of coal shall be four feet and over.

2d. When mining rates for standard coal are fixed at seventy-five to ninety-five cents per ton all coal below standard thickness shall be paid for at the rate of four cents per ton additional for each three inches below said standard thickness.

3d. When mining rates are fixed at seventy-five cents per ton the price for driving single shift entries shall be two dollars per yard, and for every advance or decline of ten cents per ton in mining rates an advance or decline of twenty-five cents per yard shall be made in entry price. Double shift entries shall be paid twenty-five cents per yard additional. Wet entry shall be paid such additional price per yard as may be agreed upon by the entry-men and mine boss.

4th. "Break-throughs" of all kinds one dollar and fifty cents per yard, based on eighty cents per ton mining; price of yardage to advance and decline in proportion to mining rates.

5th. When mining rates are fixed at seventy-five to ninety-five cents per ton miners shall be paid an additional five cents per ton for every six inches of slate or dirt that comes down, unavoidably, over the coal.

6th. When miners are compelled to lift bottom or rip top for roadways they shall be paid at the rate of not less than five cents per inch in thickness, per yard in length.

7th. Room miners shall pay the company one cent per ton and the entry-men one and one-half cents per ton for blacksmithing.

8th. The company shall provide props, caps and rails of suitable length and thickness and place them convenient to the mouth of the mine.

9th. Where water is met with in either rooms or entries the company shall either remove it so as not to delay the miners in their work or pay the miners for removing it at a rate per hour based on the roadmen's daily wages or its equivalent per ton.

10th. "Horsebacks" shall be paid for as agreed upon by miners interested and mine bosses.

11th. Price of powder per keg: When mining is seventy-five cents per ton, shall be two dollars and twenty-five cents, and for every advance or decline of ten cents per ton in mining rates there shall be an advance or decline of twenty-five cents per keg in price of powder; but miners may purchase where they please.

12th. When miners are required to load coal to be paid for on the "brush coal" or "run of mine" coal system, they shall be paid for all such coal at the rate per ton of three-fourths of the price paid for screened coal, two thousand pounds to the ton.

13th. Room turning shall be paid for at the price of one yard of single entry.

14th. Roadmen and drivers shall be paid one dollar and ninety-two cents (\$1.92) per day, but shall purchase their own oil.

15th. House coal to miners, when mining is eighty cents per ton, shall be two dollars per ton.

Signed on behalf of

Miners.

Operators.

JNO. MCBRIDE,
D. MOYLAN,
JNO. THOMAS,
JNO. P. POLLOCK,
W. H. BASSETT.

A. HOWELLS,
FRED. REESE,
WM. PHILLIP,
J. P. BURTON,
R. KELLER.

The only labor trouble of any consequence occurring during the year, that was not settled by arbitration, was the strike of the miners on the line of the Baltimore & Ohio Railroad, east of Cambridge, and is thus described by Mr. George Harrison, District President:

"Subject to the decision of the Joint Board of Operators and Miners, the miners on the B. & O. road, like all others in Ohio, demanded that the mining price should be sixty-five cents per ton instead of sixty cents. The demand was refused, and resulted in a cessation of work about the 5th of May last at all the mines east of Cambridge and west of Bellaire, except at Scheck's mine, Bellaire, where the operators

paid the price and the miners continued at work until June 7th, when they were notified that sixty cents would henceforth be the mining price. Then the men ceased work and joined those who were contending for scale rates.

"On June 6th Sullivan's miners, at Bellaire, resumed work with the understanding that they should receive the same price as Scheck's miners, and when the latter were notified of a reduction, Sullivan's also stopped, and on the following day were told to go on at work and scale prices would be paid.

"On June 7th Stewartsville miners went to work at sixty cents per ton, and worked at that price until the Joint Board again met and ordered a continuance of the advance, and on June 23d Stewartsville men demanded the additional five cents, which was granted. The Kidd Bros. abandoned their old mine at Quincy and reopened the old Hall mine, paying scale rates. The balance of the mines resumed work at scale rates in the following order: Scott's mine, Cambridge, August 25; Guernsey and Norris mines, Cambridge, Sept. 5; C. C. Co.'s mine, Cambridge, Sept. 12; Scheck's mine, Bellaire, Sept. 23, and Robinson's mine, Bellaire, Oct. 3, thus winding up by far the longest strike that has ever occurred amongst the miners of the region."

One of the most interesting cases settled by arbitration during the past year was that of the Jackson county miners, who, on December 1, 1887, struck for an advance of five cents per ton on mining, in the Wellston and Coalton districts. After being idle about three weeks resort was had to arbitration, and the men resumed work. In May the case was submitted to Judge Alphonso Taft, of Cincinnati, who, on August 8th, gave his decision against the advance. Below will be found the arguments of both parties in full, as also the decision of the referee. These arguments were submitted to the arbitrator separately, neither party having previously seen the argument of the other side, and the argument of the operators has never before been published:

MINERS' ARGUMENT IN THE JACKSON COUNTY ARBITRATION CASE.

BEFORE JUDGE ALFONSO TAFT OF CINCINNATI.

COLUMBUS, OHIO, *May*, 1887.

JUDGE A. TAFT, *Cincinnati, Ohio*:

SIR: The representatives of the miners and mine operators of Jackson county having selected you as umpire to their Arbitration Board, and as you have signified your acceptance, you are now called upon to exercise the functions of that position, and determine whether or not the demands of the miners for an advance of five (5) cents per ton should be allowed. As a copy of the testimony taken in the case will be furnished you, we, the representatives of the miners, submit this argument to enable you to understand clearly the reasons why the demand for an advanced mining rate was made, and why, in our judgment, it ought to be conceded.

The price paid for mining, as given by Mr. Hysell in the opening of this case shows that there is a great relative difference in rates paid for mining in the different districts with which the coals of Jackson county compete. The cause of this difference is due to the amount of labor necessary to produce a ton of coal, and the cost to the miner for producing it; by the latter we mean that coal known as block coal is taken down with the miner's pick, and no cost is attached, while coal that must be blasted down with powder costs the miner, who buys all powder used, from one and one-half to eight cents per ton. There are numerous bituminous coal fields in Ohio and in other States, in which the coal beds differ materially in the thickness of the vein, nature of its deposit, and in quality. Owing to this, it often occurs that the thinnest coal bed, and that which is the hardest to mine, produces the richest and most marketable coal. If all coal fields of the United States held coal of the same

thickness and quality there would be no trouble to keep mining rates uniform, but inasmuch as there is a great difference in deposits, thickness, and quality, different prices for mining have prevailed, and will always prevail. You can easily understand why it is possible for a miner to produce a ton of coal in a six-foot vein easier than in one only three feet thick. The same labor is required to undermine both veins, but after being undermined the large vein yields as much more coal as does the thinner one; hence, to ask that both be produced at the same price per ton is to insist upon that which is wrong. As a lawyer and judge, you know that it is harder to handle a complicated case than to prosecute a "plain drunk;" and as a lawyer you would ask the greater compensation for the hardest and longest work. So it is with the miner.

Ever since mining commenced in Ohio, it has been the rule to make a difference in price between thick and thin coal. This is the rule to-day in every district of the State. The mines located in Mahoning and Trumbull counties pay rates for mining which range from 65 cents to one dollar per ton. The rule is to pay 65 cents for all coal four (4) feet thick and over, and 5 cents per ton additional for every three inches below four (4) feet in thickness. The Tuscarawas Valley miners, located in the counties of Medina, Stark, Summit and Wayne, pay a rate of 75 cents per ton for mining coal four (4) feet thick and over, and 4 cents per ton additional for every three inches below four feet. At Salineville, Columbiana county, there are two veins of coal. The upper vein is three (3) feet thick and over, and 75 cents is paid for mining. The lower vein is from five (5) to six (6) feet thick, and the mining rate 60 cents per ton. The same difference is recognized in every mining district in this and other States; even in Jackson county the price at Coalton is 5 cents higher than it is at Wellston and Jackson, where the coal is thicker. The reasons for paying greater rates for thin coal than for thick is that the difference in production, in tonnage, increases as the thickness of coal increases, and it decreases as the thickness of coal decreases. When coal-beds are four (4) feet thick and over, the miner can work while standing in almost an upright position, but when less than (4) feet, and as thin as 24 inches, as much of the coal of Jackson county is, the miner must work upon his knees or lying down on his side. As most mines are wet and damp, the discomfort attending this kind of work is of such a character as to age miners prematurely, bring on sickness, and hasten death.

ANNUAL CONTRACT IN JACKSON COUNTY.

Very much testimony has been submitted by operators as to a contract which they claimed permanently fixed the relative difference in mining rates, between Jackson county and Hocking Valley mines. A brief history of the miners' position will dispel all doubts as to how long that contract should remain in force, and how it was adopted. The Miners' State Union was organized in April, 1882. At this time the operators of different districts were fighting each other for advantage in markets—the coal trade was demoralized, prices were being cut, and the miners were compelled to act in concert to prevent advantage being taken of them. With this end in view a State Convention was held, in May, 1883, at Columbus, and the following resolution, referred to by Mr. Chapman, was adopted:

"WHEREAS, The price paid for mining in the different districts of this state, having adjusted themselves, after years of experience, upon a basis which both miners and operators of mines acknowledge to be a fair basis; and

"WHEREAS, The indiscriminate fight carried on by the miner to advance, and the operators to reduce the price of mining, is alike injurious to miners and operators; therefore,

Resolved, That we recognize existing prices as a basis for future action."

The main object of the above was to keep one district from taking advantage of the other. Up to this time the coal produced in Jackson county was almost entirely consumed in the furnaces at Wellston and Jackson—some little coal was sold in

local markets, but they had not established themselves in any of the general markets, hence but little complaint was heard about their coal infringing upon that of any other district. During the summer and fall of 1883, by reason of new railroads being in running order, the coal of Jackson county commenced encroaching upon the trade of Hocking Valley mines. The Hocking operators commenced complaining of being unfairly treated by the Miners' State Union, and demanded that the prices in Jackson county be advanced. They also referred to the fact that Mahoning district and the Belmont and Guernsey district were working at prices from seven and one-half to ten cents per ton less than they were paying. The Union refused to recede from the position taken. The complaints of Hocking operators culminated by their offering a reduction of twenty cents per ton, to take effect June 21, 1884; and upon that date was inaugurated the great strike which lasted about one year. This strike cost the miners one hundred thousand dollars in money, and those who were engaged in it suffered untold hardships, hence it ill becomes operators of Jackson county to charge the miners with being false to their promises, particularly so when we consider that Jackson county secured much of the trade formerly held by Hocking, and are holding much of it to-day.

The end of the strike brought defeat to our miners, and the coal of Hocking Valley was mined for forty cents per ton. Jackson county miners could not live at that price, and the lowest they worked for was fifty and fifty-five cents per ton, and the operators held their trade even at this difference during the months of June, July, and August, 1885. In September, Hocking prices were advanced to fifty cents, and in November, by Judge Thurman's decision in the Hocking arbitration case, the price was advanced to sixty cents, while that of Jackson county was advanced to sixty and sixty-five cents. We had now commenced the leveling up of the relative mining rates of the several districts, and succeeded in increasing the price per ton in the Guernsey, Belmont and Tuscarawas district seven and one-half cents per ton in summer and ten cents in winter. This gave them Hocking prices. In January, 1886, the miners decided that an effort should be made to increase mining rates in Jackson county. In the same month, the operators' and miners' representatives from Ohio met in Columbus to fix upon a basis for the adjustment of prices for a period of one year. In that convention there was a determination expressed by operators of Hocking and other districts to have nothing to do with the movement unless Jackson rates were advanced.

A resolution was finally adopted which fixed the minimum price of mining in Ohio at sixty cents—nothing was said about the maximum prices except in the Hocking Valley mines, and this because the Hocking district was selected as one to compare with the districts of Pennsylvania, Indiana, and Illinois, which were also interested in fixing the annual rates for mining. The resolution having fixed no maximum rate for any district but Hocking, we were left free to move upon Jackson operators for an advance. In December of 1886 the miners of Jackson county and those of Mahoning and Trumbull counties demanded an advance of five and ten cents per ton. The two latter counties secured their advance by arbitration, and now, sir, we feel that, inasmuch as we have advanced the price in all of the counties of Mahoning, Trumbull, Belmont, Guernsey, part of Jefferson and Tuscarawas, the one remaining county, that is a thorn in the side of the mining industry because of its unfair mining rates, ought to be raised to their level. This done, and a long period of peace between employer and employe is assured.

DEAD WORK.

Under this head should be credited the cost of labor, outside of mining, timber, rolling stock, feed and wear and waste of machinery, etc. The cost of dead work in Jackson county, where they have scarcely anything but small drift mines, is made out to be greater than at the large shaft and drift mines of the first, sixth and eighth districts—larger than even the expensive shaft and slope mines of the second and

third districts. Single mines, in the latter districts, cost more to open and develop than did one-fourth of the mines in Jackson county. There are different reasons for their large cost. In their testimony, the companies say that one of the company acts as superintendent, and in some cases as superintendent and store-keeper both ; as a member of the company his wages ought to come out of the profits of the company, but instead of that they credit \$50 per month for each mine superintendent, and this is charged in as dead work, and increases the cost of coal, on paper, and is then used as an argument to show why they can not pay an advanced mining rate without being ruined. There are fifty-six mines in Jackson county, and \$50 per superintendent amounts to \$2,800 per month. In addition to their superintendents, each mine has a "boss," also, paid for looking after the company's interests—together they have 112 bosses and superintendents under salary. The total number of miners in Jackson county is close on to two thousand. This gives a boss and a superintendent to each seventeen miners—a fraction less. The miners are certainly well looked after, if the mines are not. Another reason for high cost of dead work is that it is due to mismanagement. The mine superintendents, operators admit in their testimony, that they are not practical miners, hence they can not be practical mine managers. They are like unto those men, who are not lawyers, who plead their own cases in court. They usually have "fools for clients." The Hocking and other districts generally employ a boss to look after from one to three mines, and a superintendent takes charge of from two to as high as fourteen mines, but the average miners to bosses and superintendents will run into hundreds, instead of one to seventeen.

RELATIVE COST OF PRODUCING COAL AT MINES.

District.	Prices per ton mining.	Dead work.	Royalty.	Total cost.
First	\$0 60	\$0 30	\$0 10	\$1 00
Second	80	42 $\frac{1}{4}$	30	1 52
Third	75	37 $\frac{1}{2}$	22	1 34 $\frac{1}{2}$
Sixth	60	30	10	1 00
Eighth	60	30	10	1 00
Average.....	5)\$3 35	5)\$1 70	5)\$0 82	5)\$5 86 $\frac{1}{2}$
	67	34	16 2-5	1 17 3-10

This gives a general average of \$1.17 3-10.

JACKSON COAL COST.

District.	Mining.	Dead work.	Royalty.	Total.
Seventh	\$0 62	\$0 43 $\frac{1}{3}$	\$0 12	\$1 17 $\frac{1}{3}$

From the above table it will be noticed that the average mining rate is five (5) cents above Jackson county prices, just the amount we are asking. Dead work in Jackson is nine and one-third ($9\frac{1}{3}$) cents higher than the average in other districts, but it is not a fair rate that Jackson is credited with. In Royalty the average rate is four and two-fifths ($4\frac{2}{5}$) cents above that of Jackson. The average total cost is about equal to the cost in Jackson.

RATE OF MINERS' WAGES IN OTHER DISTRICTS.

Coal district.	Mining per ton.	Production in tonnage per day per miner.	Gross earnings per day per miner.	Deduction per day for powder and oil.	Net earnings per day per miner.
First.....	\$0 60	4	\$2 40	\$0 12	\$2 28
Second	80	3	2 40	9	2 31
Third.....	75	3	2 25	21	2 04
Sixth	60	4	2 40	15	2 25
Eighth.....	60	4	2 40	15	2 25
			5)\$11 85	5)\$0 72	5)11 13
Average gross earnings.....			2 37	14 2-5	
Average net earnings ...					2 22 3-5

JACKSON COUNTY.

Coal district.	Mining per ton.	Tonnage per day.	Gross earnings.	Deductions for oil and powder.	Net earnings.
Seventh.....	62	3	\$1 86	\$0 20	\$1 66

The above table shows that the wages of miners in each district is higher than those of Jackson county. The general average is 56 3-5 cents per day, above, hence, even with the advance of five cents per ton, it leaves Jackson county miners 41 3-5 cents below the general average. This ought to be a sufficient sacrifice on their part. In this table we give Jackson miners credit for a production of three tons per day per miner, while the testimony of our miners fixes it at about two and a half tons. Their statements as to tonnage is as follows: Mr. Burden, three tons; Mr. Duncan, two and a half tons; Mr. Thomas, an extraordinary good miner, four tons; Mr. McCort, two and a half tons; Mr. Sharp, two tons; Mr. Phelps, two and a half tons; Mr. Sullivan, two and a half tons; Mr. Llewellyn, two and a half tons; Mr. Harmon, two and a half tons; Mr. Stiff, two and a half tons; Mr. Millhuff, two and a half tons; Mr. Levering, two and a half tons. This gives an average of 5,166 pounds per miner per day, or a fraction over two and a half tons.

The book accounts submitted, on part of operators, to show the large daily earn-

ings of our miners, is just the same kind of testimony as operators of all other districts have introduced under similar circumstances. The miners, not only in Jackson county, but everywhere, have a habit of going into the mine to prepare coal on days that the mine is idle; then when the mine runs upon the day following he sends out the coal which he has mined and loaded in two days, yet the books of the company only shows the mine to have run one day—or, when the mine works fifteen days in one month the miner works full time, twenty-five or twenty-six days, and the company produce their books to prove that their miners have performed wonderful work in producing so much coal in fifteen days. It was by this method that the books of Hocking operators showed a production of six and eight tons per day per miner. We submit with this a copy of the testimony taken by the legislative committee of the Ohio House of Representatives, and ask you to turn to the index and find the testimony submitted in behalf of the operators as to causes of the great strike in their valley; note in particular the testimony of Mr. Owen D. Charles and that of Mr. Buchtel on page 195; also the table of wages of new miners submitted by A. N. McCracken on pages 302, 303, 304, 305 and 306. The latter gives earnings at 50 cents per ton, and gives the average daily wages as \$2.45.

SELLING PRICE OF COAL AT MINES.

During the coal war between Jackson and Hocking operators for control of markets at Dayton, Springfield and other places, the average selling price of lump coal at the mines was \$1.06 per ton, and for nut coal prices ranged from 60 to 74 cents per ton. *Miners were not responsible for this war.*

When the coal war stopped the price of Jackson coal advanced to near its proper rate, and was as follows—operators' testimony: George Jones, \$1.20 per ton; Allen Higler, \$1.40; E. W. Redding, \$1.40; J. H. Calhone, \$1.35 and \$1.40; E. T. Jones, \$1.40; H. L. Chapman, \$1.35; T. J. Morgan, \$1.40—an average of \$1.35 5-7. The advance selling price of nut coal was not given, but as it always advances when lump coal advances, it is safe to make the average selling rate 80 cents per ton.

OPERATORS' PROFITS.

Miners are only paid for the lump coal produced, or coal which passes over a screen having a mesh of $1\frac{1}{4}$ inches between bars, and a screening surface of 6x12—72 feet. All coal passing through the meshes the operators get for nothing—not even royalty is paid for it. Two grades of coal, known as nut and slack coal, are made of what passes over a small screen which is placed directly under the large one. The amount of nut coal produced as compared to lump was found to be (see extracts from minutes, page 2) 24 to 100—slack coal not given. In other words, for every ton of lump coal produced, there is also 480 pounds of nut coal produced, and at 80 cents per ton, or 4 cents per hundred pounds, there is 19 cents' worth of nut coal to each ton of lump. By adding this to the selling price of lump coal—\$1.35 5-7—the operators receive \$1.54 5-7 per ton for every ton of lump coal sold. By deducting \$1.17, the cost of production, the operators have a net profit of 37 5-7 cents per ton, or more than 33 $\frac{1}{3}$ per cent. on every ton of coal produced. This showing is from the operators' own testimony, and clearly demonstrates their ability to pay the price demanded and still have profits upon their invested capital larger than any other operators in Ohio. The superiority of their coal in market and the demand for it overshadows all minor defects in its production, so far as operators are concerned. That the operators of Jackson county are securing a large coal trade by keeping down miners' wages, and in this way selling a superior quality of coal at rates nearly the same as that asked for an inferior coal, is proven by the following table.

JACKSON COUNTY COAL PRODUCTION.

The following, taken from the report of the State Inspector of Mines, shows the amount of coal produced by the several (large) coal counties of Ohio in their respective order of production :

Counties.	1875.	Tons.
Perry.		503,169
Stark.....		408,180
Athens		329,503
Mahoning.....		271,689
Belmont		213,955
Hocking		170,030
Guernsey.....		134,425
Jackson.....		117,730
Tuscarawas		107,000

Counties.	1883.	Tons.
Perry.		1,557,799
Athens.....		723,500
Hocking.....		502,160
Belmont.....		469,339
Jackson		407,854
Tuscarawas.....		330,216
Stark.....		323,594
Mahoning.....		223,740
Guernsey.....		171,555

Counties.	1886.	Tons.
Perry.....		1,607,666
Athens		899,046
Jackson.....		856,730
Hocking....		741,571
Stark		593,422
Belmont.....		573,779
Guernsey.....		433,800
Mahoning.....		313,040
Tuscarawas		267,666

In eleven years the tonnage of Jackson county increased from 117,730 tons to 856,740 tons. From the eighth producing county it has advanced to the third. In three years it has advanced from the fifth to the third. It must be evident that the coal is better than in competing counties, or they could not make such great and unparalleled advances. Justice to their miners, and to the producers of other coal fields, demands that the advanced mining rates be paid.

We desire to call your attention to the testimony of Mr. T. J. Morgan, pages 191, 192 and 193, who is a coal dealer in Springfield. He says he buys the Hocking lump coal at the mines for \$1.20 and nut coal 80 cents per ton, while he paid \$1.40 for Jackson lump and 90 cents for nut coal. This shows that Jackson coal sells higher than Hocking, and that our quoting their nut coal at 80 cents left us below their price. The freight rates from Jackson to Springfield, Mr. Morgan says, is \$1.35, while from Hocking it is \$1.50 (open rates). This gives the operators of Jackson an advantage over Hocking of 10 cents per ton on nut coal and 20 cents per ton on

lamp coal, and from 10 to 15 cents per ton on freight. The retail price in the city of Springfield is kept nearly uniform by reason of the Coal-dealers' Exchange.

On page 198 Mr. Morgan again says that the present selling rate of Hocking in Springfield is \$2.60, while Jackson coal sells at \$2.65. This, combined with the evidence furnished by reports of the Mine Inspector, Mr. Roy, and the State Geologist, Prof. Orton, who classes Jackson coal as amongst the richest in Ohio, together with the increased tonnage in their production in the last few years, shows that the superiority of their coal is such that, were the conditions of mining it equal to those of Hocking and other cheap producing districts, it would only require shipping facilities to enable Jackson operators to fill the entire trade, until such times as their supply was exhausted. The advantages of Jackson operators should not be increased or maintained by reason of small earnings on the part of their miners, neither should the miners, because the books of the company shows, as they claim, greater earnings during a year than that of Hocking miners, be required to work two days for the Hocking miners one, to earn it. Jackson county operators want as much per cent. upon their capital as does Hocking operators, and Jackson county miners ought to have the same, or nearly the same, returns for the labor they invest from day to day in the mines as Hocking miners; if one is fair the other is reasonable.

The operators have two other sources of profit besides that realized upon coal sales, viz., company stores, and the issuing of orders—on the latter they realize, so they say, from five to ten per cent. Goods bought in company stores are usually much higher than in stores that are run on a cash basis. The store is a valuable auxiliary to the mine, and, in most instances, the mine could be run at actual cost and the company make good profits out of their store sales. With mines and stores together the operators are making money rapidly; so far, at least, as their connections with mines and stores are concerned, in Jackson county.

Mr. Chapman makes reference to the inter-state law as likely to injure their trade if this was true; so, too, would it operate against all, or nearly all, operators in Ohio, but the general understanding is that the Ohio mines will secure increased trade by reason of that law. The inter-state law, however, deals with freight rates, and the rates from Jackson county mines could not be learned. Mr. Chapman, page 18, and Mr. M. Morgan, page 244, and others positively refused to state what the rates were to our leading market. This evidenced a spirit of unfairness on their part, and proved conclusively that they were afraid to state their case fully and fairly.

The coal operators of Jackson county have a perfect right to speculate at their own expense, but we must protest against their speculating and making money out of a coal-bed having natural disadvantages operating against its cheap production, at the expense of their miners and the miners and operators of other districts in Ohio. The granting of the miners' demand will not prevent operators from realizing fair profits, neither will it decrease materially the production of coal in Jackson county, but it will give to their miners, and to the miners and operators of other districts, that just and fair treatment to which they are entitled.

Respectfully submitted,

JOHN McBRIDE,
N. R. HYSSELL.

ARGUMENT OF THE OPERATORS.

JACKSON, OHIO, *May 31, 1887.*

HON. ALPHONSO TAFT, *Cincinnati, Ohio:*

SIR: The Board of Arbitration of the Jackson county mining district composed of five miners, and an equal number of mine operators, selected by the respective parties, having been in session at Jackson, Ohio, from January 4, 1887, through sundry adjournments, until March 24, 1887, "in order to determine whether a further

relative difference of five cents per ton, between the Jackson and Hocking districts, should be granted to the miners of the Jackson county mining district" (see title page of book of testimony), without being able to agree, having unanimously selected you, as umpire, to decide the question so submitted for arbitrament, upon the testimony taken before the board, a copy of which is herewith submitted, and upon other facts of such historical, geographical, or general notoriety, that courts *ex officio*, take notice of them, and which both sides take for granted.

The operators, in their own behalf, respectfully beg leave to submit the following:

STATEMENT.

The two districts named, constitute two distinct, and well-known coal fields of Ohio.

The Hocking district embraces the mines in Perry, Athens, and Hocking counties, that are tributary to the Ohio Central Railroad, to the Shawnee division of the Baltimore and Ohio Railroad, and to the Columbus, Hocking Valley and Toledo Railroad, and its numerous branches, in Athens and Hocking counties. It embraces two districts of the Ohio Miners' Association. The nature and properties of its coal are well known. It is by far the largest coal field in Ohio. It is centrally located, and by reason of the railroads which penetrate it as coal roads, the product of its mines come in competition with those of all other coal fields of Ohio, and also those of Indiana, Illinois, Western Pennsylvania and West Virginia. For this reason it influences, and to a considerable degree, especially in Ohio, *controls*, both the price of mining and of selling coal, and the prices fixed by it, form the base for determining prices elsewhere.

The Jackson county mining district embraces the coal mines in Jackson county, and is included in the seventh district of the Ohio Miners' Association. It is penetrated by the Portsmouth branch of the Cincinnati, Washington, and Baltimore Railroad, the Dayton and Ironton Railroad, and the Ohio Southern Railroad.

The Dayton and Ironton, having been built mainly for the purpose of connecting the city of Dayton, and the Ohio Southern the city of Springfield, with this coal field, and the principal business of the two last named roads, is the transportation of coal from this field. The seams of this field are not so thick as those of the Hocking district. The coal is non-coking and open-burning. It is soft and friable, and will not bear handling or storing to advantage, being liable to much breakage in handling, and to form into slack on exposure to the air. It is a pure coal, comparatively free from sulphur and other impurities, and is used in its raw state for smelting iron ore in blast furnaces. It first came into notoriety by its use in the manufacture of pig iron, first, in the furnaces near the town of Jackson, and later in the vicinity of Wellston, between Jackson and Hamden, on the Portsmouth branch of the Marietta and Cincinnati Railroad (now C. W. & B. R. R.).

Seven such furnaces at Jackson and three at Wellston, ten in all, were built, especially intended for the smelting of iron ores by the use of this coal, of which, three at Jackson, and three at Wellston, are yet being operated, the others having failed and gone out of business.

The natural market for the coals of the Jackson district is determined by its location and its means of outlet. It reaches Portsmouth on the Ohio River, but has no foothold there by reason of the fatal competition of the coals which reach that city by cheap river transportation, including the Pomeroy, Ashland, Kanawha river, and Pittsburgh coals, the latter of which, from its superior qualities, commands a market price higher, by from 25 to 30 cents per ton. It also reaches Cincinnati, but for the same reason, viz., cheap river transportation, all attempts to establish a market in that city, for any coal coming by rail from Ohio mines, have resulted in loss and disaster. (See testimony of E. W. Redding, p. 36, T. J. Morgan p. 26).

This competition from the Ohio River, as may well be seen, extends to all points on railroads leading out of Cincinnati, for the distance of 25 or 30 miles, and as far as

Indianapolis, in Indiana. The natural market of Jackson county coal fields is, therefore, limited to points west, and northwest, of Jackson, reached by Dayton and Ironton, the Ohio Southern, and the Cincinnati, Washington and Baltimore roads, and their connections, of which points Dayton, Springfield, and Chillicothe are the chief. At these three cities, the Hocking coals come in direct competition; at Chillicothe, via the C. W. & B., and Scioto Valley railroads, and especially by the Ohio canal, where now tolls are merely nominal, and transportation by boats is very low; and at Dayton, Springfield, Washington C. H., Wilmington and Xenia, by the railroads radiating from Columbus, the great distributing point for coals of the Hocking district.

This competition is more direct and severe as you proceed toward the lakes, and west and northwest, as is apparent from the inspection of any recent railroad map.

It should be further noted, that the Jackson county district has been subdivided into *three* divisions, spoken of in the testimony as,

(1). The Jackson district, or subdivision, embracing the shaft and slope mines in the immediate vicinity of the town of Jackson, the products of which are mainly, if not wholly, used in the iron furnaces at that place and elsewhere.

(2). The Wellston district, or subdivision, which embraces the shaft and slope mines in the vicinity of Wellston, extending westward so as to take in the Franklin mines, and eastward so as to take in the slope mine No. 3 of the Southern Ohio Coal and Iron Company. It embraces about eight mines, three of which are worked almost exclusively for mining coal for use in the Wellston, Milton, and Eliza furnaces.

(3). The Coalton district, or subdivision, which embraces all the Jackson hill coal, mined by drifting, the mines of which are reached by the Ohio Southern and Dayton & Ironton roads, and also the shaft mines in the vicinity of Coalton, in Coal township of Jackson county. Coalton is situated on the Dayton & Ironton and Ohio Southern roads, about midway between the town of Jackson and Byers' Station on the C., W. & B. road. The product of all the mines of this subdivision is shipped to market by the Ohio Southern and Dayton & Ironton roads.

The opening of the mines in the Coalton subdistrict, and to a great extent in the Wellston subdistrict, is due to the building of the Dayton & Ironton and the Ohio Southern railroads, both opened as narrow gauge railroads, in the year 1878, but now both standard gauge. Since then the mines opened in the Coalton district have reached over thirty in number, and all these, and a majority of those in the Wellston subdistrict, are wholly dependent upon the facilities which these roads give for reaching a market. The traffic of these roads, as before stated, is mainly the transportation of coal, and the continuance of their operation depends largely upon the revenue derived from such transportation. As a consequence the railroad managers and the coal operators of this field have vied with each other, in the most vigorous, untiring and persistent efforts, to extend the market for and to increase the output of this coal, and have succeeded in creating a trade which comes in fair but not undue competition with the coals of the Hocking Valley and other districts of the state, and a continuance of the same sort of effort is required in order to maintain its position in the markets reached. During the several years since the opening of mines in the several coal fields of Ohio, the price of mining in these several fields has, under the influence of natural laws, "*adjusted itself to the competition between the several fields, or districts, and has settled down to a basis or level,*" which was regarded "*by all the miners as fair and just,*" as is well stated by Mr. John McBride, President of the Ohio Miners' Association, in his testimony reported in the proceedings of the Ohio Legislative investigating committee of 1885, p. 157.

A brief history of this process of adjustment, as applicable to the Jackson and Hocking districts, will be useful.*

*NOTE—Miners are paid for digging by a price fixed on screened lump coal only. Nut coal passes through the screens and goes to the operator, without further charge.

Prior to 1880, the price of mining in all three subdivisions of the Jackson district *had been the same* as in the Hocking district.

In the spring of that year a demand was made by the miners in the Coalton district, or subdivision, for an increase over the price previously existing. This led to a long and bitter strike, during which the state troops were called out, and were stationed at Coalton until the strike was ended. This was accomplished by a concession of one of the operators to the miners' demand; the rest of the operators were obliged to follow, and an advance of five cents per ton was established *in that subdivision* over the old, or Hocking price. There was no change made at Jackson or Wellston.

In the spring of 1883, some differences arose between the operators and miners of the same subdistrict (Coalton), as to the price of entry-driving (the same being paid for by the linear yard, and involving the taking up of slate, or rock, from the bottom, or down from the top, of the entry), and also as to some other questions of a local character, not affecting the price to be paid for digging. These differences were settled by a written agreement, to be in force for one year ending about May 1, 1884. In this agreement the price of mining was continued at the price which had been fixed by the strike of 1880, to-wit, five cents above the price in the Hocking district, and a provision was inserted to the effect that in case of a strike in the Hocking district, resulting either from a demand for an increase on the part of the miners, or for a decrease on the part of the operators, the miners at Coalton should continue at work at the existing price until the strike in the Hocking district should be ended and the price settled, when the price so fixed should regulate the price at Coalton, the same difference of five cents per ton to be maintained.

This contract, although with the Coalton miners only, was made with the knowledge of the representatives of the Jackson and Wellston subdistricts, and was acquiesced in by them as furnishing the rule for labor during a strike in the Hocking Valley.

At the termination of this twelve-months' contract, in May, 1884, the operators in the Coalton district declined to continue work unless a similar contract should be made for another twelve months. The miners refused to renew the contract on the ground that its main feature bound them to continue work during a strike in other parts of the state, which might be ordered by the State Miners' Association, and involving principles of vital importance, which could not be established without a *general* strike, in which they should, in justice to their fellow-miners, take part.

After some days of discussion, and cessation from work, this objectionable feature was given up by the operators, and a new contract agreed upon, dated June 11, 1884, which here follows:

JACKSON, OHIO, *June 11, 1884.*

BASIS OF SETTLEMENT OF THE DIFFERENCES BETWEEN THE MINERS AND
OPERATORS OF THE COALTON DISTRICT, JACKSON COUNTY, AND ADOPTION
OF RULES GOVERNING THE FUTURE WORKING OF THE MINES AND
FOR RESUMPTION OF WORK AT ONCE AT ALL THE MINES
IN SAID DISTRICT.

Rule 1. The price paid for mining shall be five cents per ton above Hocking Valley prices.

Rule 2. The miners of this district shall be free to act upon all questions of a general character in such manner as may be decided upon from time to time by the State Miner's Association in their state conventions, provided that the difference in price named in the first rule shall be deemed a local question.

Rule 3. All differences of a local nature that may arise between operators and miners of any mine in this district shall be settled by the mine committee and mine

boss. Should they fail to agree, the difference must be referred to a board of arbitration, composed of five miners and five operators and one disinterested person, the latter to be selected by the first named parties, the decision of the board to be final; pending arbitration work shall continue.

Rule 4. There shall be no meetings held in the mines during working hours.

Rule 5. No operator shall have control over the purchasing power of any of the miners.

Rule 6. The price paid for entry driving shall be \$1.75 per yard when mining is 75 cents per ton, and when 85 cents, \$2 00 per yard, and shall vibrate up and down in the same proportion, except in case there is rock or rock mixture in the bottom removed, in which event it shall be paid for at one-third more over and above the price of the top slate.

Rule 7. No mine shall be prejudiced and no miner victimized by reason of the present trouble in the Coalton district.

*Signed on behalf of the Miners
of Coalton District.*

JOHN WALL,
JOSEPH SMITH,
JOHN WYKLE,
CHAS. RITTENHOUSE,
JOHN BLANKENSHIP,
Committee.

*Signed on behalf of the Operators
of Coalton District.*

J. J. C. EVANS,
H. L. CHAPMAN,
EBEN JONES,
J. MORROW,
E. W. REDDING,
Committee.

It will be seen that the chief changes were in the adoption of rule 2, and in some modification of the rule relating to entry driving, settled by rule 6.

This contract continued to be the rule of action not only in the Coalton subdistricts, but also in the Jackson and Wellston subdistricts, the only difference being that the price in the Coalton district was 5 cents above the price in the Hocking Valley, while at Jackson and Wellston, it was the same as in the Hocking Valley, namely, 60 cents per ton.

At that time the relative prices for digging coal in the several districts had been adjusted, under the operation of natural laws according to the local differences and the competing interests of the several districts.

The State Miners' Convention, held at Columbus, May 1, 1883, headed an important resolution with the preamble:

WHEREAS, The prices paid for mining in the different districts of this state *having adjusted themselves, after years of experience, upon a basis, which both miners and operators must acknowledge to be a fair basis*"—(see proceedings of investigating committee, p. 157, cited below), thus recognizing the relative differences as then existing to be just and fair.

An attempt to disturb this basis by the operators of the Hocking Valley district in 1884, by reducing the price in that district, brought on the great strike of that year. The attempt was resisted by the miners on the very ground that the then existing prices throughout the state were fair and just and should be maintained.

(See McBride's testimony in proceedings of Ohio Legislative Investigating Committee, p. 157).

We have seen what this relative difference was as between the Hocking district and Jackson county, prior to that strike. It was maintained at the same relative difference during the strike and since, until attempted to be changed by the strike in Jackson county, of December 1, 1886.

The price in the Hocking Valley, prior to the strike of 1884, was 70 cents. It was maintained at that price in Jackson and Wellston subdistricts, and at 5 cent

in advance of that, in the Coalton subdistrict, until the price was settled in the Hocking Valley at 50 cents per ton, when the price at Jackson and Wellston was fixed at the same figures, 50 cents, and at Coalton at 55 cents.

The evidence shows that there was some uncertainty as to the prices paid at certain times in the Hocking district, the same varying from 40 to 50 cents; but it was assumed in Jackson county, that the price in the Hocking district was substantially, 50 cents, and the price paid in the Jackson county field was regulated accordingly until the strike in the Hocking district of November, 1885, was inaugurated. In the submission of the matter then in dispute in the Hocking district to Hon. A. G. Thurman, as umpire, both the operators and miners declared "the question of the price of mining in the Ohio Central and Hocking Valley districts has been in dispute since the beginning of the former strike, June 23, 1884. *From the close of that strike until November 1, 1885, the price paid has been 50 cents per ton.* On the 1st day of November, 1885, the miners struck for sixty cents per ton, being an advance of ten cents per ton." Whether this advance should be allowed was the question submitted to Judge Thurman. (See Annual Report Bureau of Labor Statistics for 1885, p. 251).

Judge Thurman gave his decision in favor of the advance January 7, 1886, and the price was then fixed in the Hocking Valley at 60 cents per ton. The price was then advanced to the same figure at Jackson and Wellston, and to 65 cents at Coalton, and so remained until the demand of December 1, 1886, was made by the miners of all three subdivisions in the Jackson county district, for a further relative difference, so as to fix the price at Jackson and Wellston 5 cents per ton, and at Coalton ten cents per ton, in advance of the price in the Hocking Valley. Since December 1, 1886, a further advance of 5 cents per ton, in the Hocking Valley, taking effect May 1, 1887, has been made, to be followed on November 1, 1887, by a further advance of 5 cents per ton. A similar advance has been accordingly made in the entire Jackson county district. If, therefore, the demand of the miners in this proceeding, shall be allowed, the price of digging coal in Jackson county will be as follows:

From December 1, 1886, to May 1, 1887, at Jackson and Wellston, 65 cents per ton, at Coalton 70 cents, as against 60 cents in the Hocking Valley.

From May 1, 1887, to November 1, 1887, at Jackson and Wellston, 70 cents per ton, at Coalton, 75 cents, as against 65 cents in the Hocking Valley.

After November 1, 1887, at Jackson and Wellston, 75 cents per ton, at Coalton, 80 cents, as against 70 cents in the Hocking Valley.

It must be remembered also that under the agreement of June 11, 1884, each advance of five cents per ton in the price of digging will involve an advance of $12\frac{1}{2}$ cents in the price per linear yard, for driving entries. In addition to this, all the labor that is paid for by the day to pushers, bailers, track-layers, men at the tip as weighers and tippers, and engineers and cagers, etc., etc., must also be advanced $7\frac{1}{2}$ cents per day for each advance of 5 cents per ton for digging. In point of fact, therefore, the cost of putting the coal on the cars is increased about 8 cents per ton by each advance of 5 cents per ton in the price of *digging*.

The importance of the question cannot be too seriously considered.

The output of coal from Jackson county, embracing the entire district now in controversy, as shown by the official report of the Ohio State Mine Inspector for 1886, p. 16, was, for that year, 856,740 tons of both lump and nut, of which 717,516 tons was lump only. The additional burden, therefore, which would be imposed on the coal traffic of that county, by reason of the proposed relative increase of price for digging, 5 cents and for dead work 3 cents, would have to be borne by the consumers of coal, or by the producing operators.

The consumers will not pay the additional 8 cents per ton, as the evidence fairly

shows that the competition of other coals in the markets reached by the Jackson county coal, prevents any such addition to the market price. The added burden, therefore, must fall exclusively on the mine operators, including the furnace operators, whose profits depend on the price of pig iron at their furnaces. Both classes of operators regard the proposed added cost over and above the prices in Hocking coal field, as pregnant with ruin and disaster, not only to themselves, but to the railroads whose traffic depends on the continuance of the output of coal, the manufacturers of pig iron, and the large number of people, who are dependent on the coal and iron industries of the county, aggregating many thousands, and to the miners themselves, who will be obliged to seek other homes, or other employments, if this burden shall prove too heavy to be borne.

The miners, on the contrary, insist, first, that the advance ought to be allowed, because the wages earned by the miners in the Jackson district are less than the wages earned by miners in other districts; and second, because it may be made, and still allow a fair profit to the operators.

But these propositions are controverted by the operators, and we think neither of them are sustained by the proof. We insist that the burden of sustaining both of them, by a fair preponderance of reason and testimony, is upon the miners, who are seeking to disturb a rule of action, which was settled upon their own successful demand, and as the result of their great strike in the spring of 1880. It has been maintained without a break from that time, until sought to be broken by the demand of December 1, 1886. It was solemnly affirmed by rule 1 of the "basis of settlement of differences" between the miners and operators of June 11, 1884, which embraced in express terms the "adoption of rules governing the future working of the mines," *without any limit as to time.*

The operators have reason to claim that this agreement is still binding. But whatever view may be taken of the legal character of this document, it certainly, as a matter of conscience and common honesty, should continue to be observed, *unless it be clearly shown that such changes have since occurred, that make it inequitable and unjust to insist upon its observance.* The testimony shows no such changes. On the contrary it is shown by the statistical reports of the state that about the same proportion of days' labor per month, continues to be made, thus giving fairly steady work to the miners, and that the ventilation and other sanitary conditions relating to the mines, under the influence of state laws and state inspection, are constantly improving, thus assuring the continued healthfulness of the employment, and its freedom from accidents. It is notorious that the cost of living has steadily decreased, and it is not shown that the condition of the miner is worse than it was, when the rule of difference was established in 1880, solemnly affirmed in 1883, and acted upon continuously from that time until the present controversy arose.

But it is urged that although this rule has been long established the miners in the Hocking district can mine more coal per day, and consequently can earn more money per day than the miners in Jackson county. The testimony, fairly considered shows, that while this may be true, of a single day's work, yet by reason of steadier work in the Jackson district, caused by the steady running of the iron furnaces, and the large use of Jackson coal by railroads and manufactories (all of which require coal at a low price but are comparatively regular in its daily use), the miners at the end of the year had fared better than in the Hocking Valley and had received a fair remuneration for their labor.

If, however, this were not true, and it were established that the Hocking miner can earn more money by the same labor, than his brother in Jackson county, still do not such differences prevail in all trades, and in all places? The carpenter or blacksmith is better paid in one place than in another. He who is paid less is satisfied with his wages, and content to remain where he is, because of old

associations, wife, sweetheart or friends, greater healthfulness, steadier work, doubt as to whether there is room for him in another field, or some consideration, which induces him to forego the chance of larger reward elsewhere.

Prior to 1878 there was but a small mining community in Jackson county. Its ranks have been increased to their present number, by the addition of natives of that and adjoining counties who have learned the business of mining (for which a few months (3 to 5) is sufficient), and by strangers coming from other districts. Not one of these parties was under any compulsion, but voluntarily engaged in the business. They are equally free to leave this service, and go to other coal fields or engage in other employments. They are not disqualified for other departments of manual labor, and while a change of location or of occupation may subject them to some inconvenience, it will involve them in no great loss.

It is not so with the owners of the furnaces, the railroads, or the proprietors of the mines. They are, it is true, engaged voluntarily in their several enterprises; but they are not free to stop business, or to have it stopped by the demands of others, without subjecting themselves, and the communities which are more or less dependent upon them, to great and irretrievable loss.

In this connection we may state that the proof shows that the miners of Jackson county earn fair wages, equal to or greater than the average wages received by other workmen in trades requiring equal skill. There is nothing in the nature of the occupation requiring much time in order to become a practical miner; certainly a shorter period is needed than is required for the house carpenter, blacksmith or engineer, to learn their trades. It is in proof (Geo. M. Jones, p. 381) that the daily wages of these skilled artisans, in Jackson county, are less than those of average miners. Common experience and observation show that a farm hand, with skill enough to run a plow, handle and care for live stock, drive a team of horses, has served an apprenticeship of longer duration than is required to make an average miner. Yet he ordinarily receives but \$1.00 per day and pays his own board. The trackmen and employes of railroads receive, in cities like Cincinnati, where the demand for labor is greater and the cost of living is higher, \$1.25 per day, and in the country and smaller cities and towns, \$1.10 per day—they in all cases paying their own board. A large majority of the clerks in railroad offices, many of them skilled accountants and of good general education, receive from \$30 00 to \$50 00 per month, or from \$1.20 to \$2 00 per working day, out of which they support themselves and their families.

Let us examine the testimony in this case somewhat critically. No just estimate of it can be formed, without taking into consideration the varying character and habits of the men who make up our mining population. Some are as reputable and well-behaved, as honest and industrious, as can be found in any class of citizens; others are shiftless and indolent, working but a few hours a day, or but a few days in a week or month, having no ambition or desire for anything save something to eat and drink, and working for that and nothing more. Joe Stiffler, a witness for the miners, says (p. 155): "There is a difference in miners in the same locality, in the same bank, and even in the same room. Have known miners in the same room, one would get out five tons, one next to him but two and one-half tons, *and there are lots of men who would not dig that much.*"

The witnesses on the part of the miners are asked, "Including all the miners engaged in mining coal in Jackson county, what do you think would be the average production per man per day?" (See Millgoff, p. 123.)

Mr. J. C. Dungan is asked (p. 131): "What do you consider an average day's output, taking everything into consideration, the *kind of men*, and the kind of mining, in this county *taken as a whole*?"

Charles Blagg is asked (p. 145): "What do you think is an average day's work, *taking the men as they are, and the mines as they are*?"

Joe Stiffler (p. 155) is asked: "Taking the mines of Jackson county, and the miners collectively just as they are, what do you think would be an average day's work for a man?"

All the witnesses in behalf of the miners are asked similar questions. We submit that the standard fixed by such questions is not the true test of earning capacity of labor in the mines. It places the indolent and idle on the same basis as the industrious and vigilant; the good, the indifferent, and the bad on the same plane. When we desire to know what men may reasonably earn in a given field, so that "a fair day's work may receive a fair day's wages," the question should be, "What *can a fairly competent miner, with reasonable industry*, earn in a day at the mines in Jackson county?" or, "How many tons can an average miner, with reasonable industry, get out in a day?" But the inquiry was not made in this way. Made as it was, the answer is generally two and a half tons, which at Coalton would yield \$1.67½ per day. Blagg, p. 145, puts his wages at \$30.00 per month, and names October, 1886, as yielding \$42.50. Stiffler says (p. 157) that the average earnings in the Wellston subdistrict was not over \$65.00 per month, and knows about the Coalton district.

D. A. Thomas, another witness for the miners (p. 415), is asked, "What do you consider a fair day's work, taking in the entire district—all the men, such men as are digging coal, one with another?" He answers: "Well, I would put it at \$2.50 a day for each miner. That is my candid opinion, provided he worked twenty-six days in the month." He began work as a miner in Jackson county in 1875. He says there are some miners who go over the sum named, and some under. He says (p. 417) that, at the Millton mine, in Wellston, he could dig 100 tons a month, and this exclusive of bone coal five inches thick, which had to be dug up and thrown away. The quantity named would make about four tons daily, which at sixty cents per ton would make \$2.40 per day.

Robert Burden, another witness for the miners (p. 423), is asked, "what do you consider a fair average day's work in this district taking such men as you have and such mines as you have," and he answers, taking the entire county, "that three tons would be a fair average for an average miner," and when he is reminded that he is not asked as to the average miner, but "*of such men as you have in the district.*" And to this he answers, "yes, sir, as near as I can get at it three tons a day would be an average day's work; taking the whole county and the high coal and the low coal altogether, I think three tons a day would be an average day's work." He had been in the district since 1880. He says, p. 424, that he could mine in the Comet mine where he worked, and where the seam was from three and a half to four feet thick, three and a half to four tons a day, and believes he could average four tons a day, the entire month, and that all the men in that mine could average three and a half tons per day. (p. 425).

This would give at the Comet mines, in the Wellston district, an average per diem of \$2.10. It will be noted that none of these witnesses give in detail, their daily or monthly earnings. We come now to the testimony for the operators, on this question of miners' earnings. Here we arrive at some certainty, for here books were kept and accurate statements made.

Elias Crandall, p. 351, in charge of the Globe Iron Company, in the Jackson subdistrict, gives the names of all the miners in his mine, and the earnings of each for the months of December, 1886, and January, 1887, the rate being 60 cents per ton. For that December the highest earning of a single man was \$71.71, the lowest \$35.65. The mine worked 23½ days and the average wages per man was \$2.19½ per day. For January, the highest earning of any man was \$76.09, the lowest \$33.67, and he is marked as "sick." The mine worked twenty-four days, and the average wages per man was \$2.26 per day. T. J. Morgan (p. 278 and 279), superintendent of the Wellston Coal Company in Wellston subdistrict. He says expert miners dig

five tons per day right along ; there are some others, who dig four tons a day, and some who dig less. He classifies the earnings for the eight months preceding December 1, 1886, and says, "for the extra good expert miners during the eight months, the average was six and a fourth tons a day, being \$3.75 per day for the entire time that they worked. Twenty-four miners averaged four and a fourth tons, or \$2.55 per day. Many others, fully as good as these, did not work the entire eight months. The price was sixty cents per ton, for August, 1886, the average per man was $4\frac{55}{100}$ tons per day. That is, for all the miners in the mine, \$2.73 *per man per day*. For September, the average is three and one-third tons and \$2.00 a day. This low showing is accounted for by the fact, as stated by the witness, that "a good many new men were employed, who could not do as well in starting as afterwards." This brought down the average. All the men working in the mine, good, bad and in different, were included in this average. A fair average day's work for an average miner in the Wellston subdistrict, working from eight to ten hours a day, is put at four and a half tons. Some cannot dig that and some will dig more.

The averages named do not include the wages of entry drivers except break-ntry work in turning rooms, and the like.

Mr. Willard, p. 305, president and general manager of Milton Furnace and Coal Company, and president of First National Bank. He gives in detail the total earnings of each miner for each month, of the eight months prior to December 1, 1886. Some of them earned an average of over \$70.00 per month for the whole period. the average for the entire number was \$47.66 per month, and he places the average earnings of his miners at \$2.50 per day. We call special attention to the entire testimony of these witnesses.

Peter Hoop (p. 361), manager of Eliza Furnace in the Wellston district, gives the number of miners employed for October, 1886, as thirty-five; number of days in operation, eighteen; number of tons of coal mined, $2702\frac{70}{100}$; amount paid miners at sixty cents per ton, \$1,621.67; average number of tons to each miner for eighteen days, 77.22 tons; to each miner per day, $4\frac{28}{100}$ tons; for November, number of miners employed, thirty-five; days in operation, twenty; tons of coal made, 2864 tons; price paid per ton, sixty cents; average number of tons for each miner for 20 days, $81\frac{82}{100}$ tons per day, average 4.09 tons.

Moses Morgan (p. 236-241), manager of the Jones & Morgan and the Standard mines in the Coalton subdistrict. He gives in detail the earnings of his men, and shows that in the Standard mine (p. 239) all the men averaged, say $3\frac{66}{100}$ tons per day, excluding all entry work; this at sixty-five cents per ton would be \$2.40 per man per day.

M. D. Jones (p. 345-6), of the Emma mine in the Coalton district. He gives as the result of an average miner's work, nine hours per day, three and a fourth to three and a half tons, and an expert miner, nine hours per day, five tons. All the miners, good and bad, averaged for October, 1886, \$2.50 per man per day, and in September \$2.65. The representatives of many other mines are examined under oath, and the tonnage per man per day is given. We invite attention to all these statements. They may be found as follows: Moses Morgan, p. 257; Allen Stiff, p. 466; John J. C. Evans, p. 211-214; John E. Hays, p. 315; E. T. Jones, p. 251; Jno. C. Jones, p. 312; J. Morrow, p. 337-8; H. C. Murfin, p. 341; E. W. Redding, p. 273; S. H. Swift, p. 332.

This evidence as to fourteen or more different mines, taken some from each of the subdistricts, shows beyond question that a fair average miner, working from eight to ten hours per day, can and does mine from three and a half to four tons daily, amounting to from \$2.20 to \$2.50 per day. Other miners get out from four to six tons daily, earning from \$2.50 to \$3.75 per day, while others who work irregularly a few hours daily, or a few days in a week or month, did not make so

much. This, however is their own fault. The only expenses incurred by the miners in this business is for powder, oil and pick sharpening, which will not exceed four cents per ton as the evidence will show.

Let us compare these results with the estimated earnings of the miners in the Hocking district. Mr. Hysell, in behalf of the miners, in his opening statement, p. 3, claims the

Average production per day to be four tons, at sixty cents.....	\$2 40
From which he deducts three cents per ton for powder, etc	12
	<hr/> \$2.28

The evidence in support of so high a figure, is meager, uncertain and unreliable.

Their first witness, Millhoff (p. 124), says "I cannot say what a man can do in the valley. A man can mine more coal there than here, a difference of 2000 pounds (or one ton) more from what I have experienced there;" and yet he came from the Hocking Valley to Jackson, entered the mines, and remains there to this day (p. 131).

Charles Blagg (p. 146) says he could dig in Jackson county from two to two and a half tons per day, and in the Hocking Valley one and a half tons more, which would make from three and a half to four tons per day, but when he is asked, do you think a man would be able to earn more money in the Hocking Valley, than in Jackson county? he answers, "*he could, if he could get steady work*" This is, in fact, an answer in the negative, and shows why he did not remain in the Hocking Valley in 1880. Thinks he could mine at least a ton more, and in some places one and a half tons more there than here. But he was dissatisfied and came here because "there was a demand here and no scarcity of transportation." He did not intend to stop here, but found a girl, married her, and settled down.

D. A. Thomas (p. 416) thinks more coal can be mined in the big coal veins at Hocking than in Jackson, *but never worked in the big veins*. As between the Hickory Wythe mine near Straitsville and the Jackson mines, his choice would be determined by the fact of getting steady work. But he, too, returned from the Hocking Valley to the Jackson mines, and there remains.

Robert Burden (p. 423), another witness, gives the preference to the Hocking Valley, and thinks a man can mine two tons there to one in Jackson county, but he also left there in the spring of 1880 (p. 428) and came to Jackson county, and has remained there ever since. He is a single man, and has not even a "girl" to settle him. It seems, however, that he had ague in the west, and it may be the salubrity of the Jackson atmosphere determines his preference.

On the other hand, John E. Hays (p. 315), bank boss at two of the principal mines in the Coalton district, testifies that he worked ten years as a miner in the Hocking Valley (p. 321), and left it for Jackson in 1880-1, to go to work as a miner here. He says, taking everything into consideration, he gives the preference to mining in Jackson county. On page 316 he gives the reason for this, that a miner gets steadier work here than there, and has other advantages which he has not there. On page 318 he explains that in the Hocking Valley the entry and room men lay their own tracks, push their own bank cars from the rooms to the entry, and go to the entry for empty cars. He says it is harder work to dig coal in the Hocking Valley mines. The bank cars are high, and there is a good deal of dirt in the coal,—a great deal of slate to be thrown out; that there are two bands of slate in the seam to be separated and thrown away. The first band is from eighteen to twenty inches from the floor. There is a second band, and also a soft sulphur band above, that has to be thrown out. He also notes other disadvantages of the Hocking Valley mines, and on these reasons he bases his preference for the Jackson mines (p. 321).

We call attention, also, to the testimony of Allen Stiff (p. 466), a practical-miner, who has worked in the mines of Illinois, and in Meigs, Perry, Athens and Jackson counties, Ohio, and is familiar with them all. He shows that several of the witnesses called by the miners, to testify to the quantity of the coal that may be mined in a day, *are not average miners, but below the average*, because either of incapacity or of irregular habits and working hours. He gives the average day's work of an average miner as three tons, and declares that, in his judgment a man can do as well in the Jackson county district as in any other district where he has worked. This included Perry and Athens counties, which belong to the Hocking Valley region

We especially invite attention to the testimony of Andrew Roy, a practical miner since his boyhood, and who worthily filled the *important office of State Mine Inspector of Ohio* for the period of eight years, during which time he visited and inspected officially all the coal districts of Ohio. His testimony is to the effect that, while a Jackson county miner cannot make as much as he might "in a good big vein in the Hocking Valley, still, taking one district with another, including the Hocking Valley, a Jackson county miner, with all the advantages and the disadvantages of his district compared with other districts of the state, one year with another, can and does make as much money here as in the Hocking Valley, or anywhere else in the state." He shows that in the Hocking Valley region, where *the same price prevails throughout the whole district*, the mines vary from four feet, as at Jacksonville, to from ten to eleven feet at Straitsville, and that in all these mines the miners are obliged to throw out a large amount of slate or other unmarketable material. Why not discriminate as to these mines, also, according to their respective advantages or disadvantages under which the miners labor in each? Simply because the coals must, all alike, go into the *same market*.

Mr. Roy further declares (p. 299), that notwithstanding the fact that in some parts of the state higher prices are rightly paid for mining in thin veins than are paid in the thick veins, yet in Jackson county "the miner is well paid, not because the coal is thinner, but because *it is more easily mined, and that a miner in Jackson county can do as well, with the prices ruling there, as he can in Pomeroy or Coshocton, with the prices ruling there—the prices in Coshocton being ten cents higher.*" (See Harrison's testimony.)

On pages 299 and 300 Mr. Roy makes a pertinent explanation, to-wit, that in a coal region where the coal is particularly easy to mine, "everybody flocks there, and of course everybody can't get work." From this it is apparent that of the many who flock to the big vein mines of the Hocking Valley, the surplus men, who can't get work, must take less favored places, and the attempt to make these less favored places pay a higher price for mining, *where the coals go into the same or similar markets*, is to violate the natural laws which regulate the question of supply and demand. This cannot be done without injustice and wrong to somebody.

Mr. Roy, on p. 300, repeats his conviction as the result of his experience and observation, that although one getting plenty of work in Hocking could make more money than in Jackson, yet taking the whole year throughout he will make more money in Jackson, because he can get more work to do, and he declares (p. 304) that in his opinion there is a larger per cent. of the miners in Jackson county who own their own homes than any of the miners in the United States, considering the time the mines have been opened. This is the striking result of profitable mining work

He further shows, that while the Jackson coal is a pure coal, it is limited in its use; that it is not a good house coal because of its rapid consumption, and does not compare with the Brier Hill coal in that respect.

Another important portion of the testimony admitted before the Board of Ar-

bitrators, and considered by them, is the sworn testimony of sundry witnesses taken before a commission of the Ohio Legislature in 1883, and the report published in 1884. This portion of the testimony is found in the bound volume (type written) now submitted, on pages 225, 226, 227 and 228, and also from the proceedings of the Hocking Valley Legislative Investigating Committee of 1884. (See pages 228 to 233, inclusive, of bound volume testimony in this proceeding.)

This testimony shows what the average product per man per day in the various coal districts of Ohio is, and in some of the districts what the average earnings of the miners was per day, and established by comparison that the miners of Jackson county occupy a more favored position than the miners in the other districts. This testimony before the commission and committee was taken without reference to the present controversy, and is unbiased by any feeling of interest in behalf of either of the now contending parties, and is therefore worthy of reliance as impartial.

We also call special attention to the historical facts and to the statements of John McBride, the President of the Ohio Miners' Association, furnished in the evidence of H. L. Chapman, on page 263 of the testimony herewith submitted, together with the comparison given from the report of the Commissioner of Labor Statistics for 1880, p. 145, showing that *Jackson county miners* stand higher in the scale of earnings than those of any county, save Perry only.

On the whole we think it clear that the miners of Jackson county have not shown any just reason to complain of the existing state of things.

II. We come now to consider the remaining ground urged by the miners in favor of the discrimination and advance they have demanded, viz., that such advance ought to be allowed, *because the operators will still be able to send their coal to market and sell it at a remunerative profit.*

If we have shown that the miners of the Jackson district are paid a fair day's wages for a fair day's labor, we submit that the supposed profit of the operators, large or small, furnishes no ground for an increase of wages above a fair and reasonable sum. The wage-worker has no capital invested, and takes no risk in the enterprise. The operator takes all the chances of his experiment. If he succeeds he ought to have all the benefits, that do not work manifest injustice to others, inasmuch as he must suffer the entire loss in case of failure.

But, aside from this, we think the testimony, and the reason of things, show that the operators of Jackson county are not making and cannot make any undue profit, and cannot sell their coal in the market at any higher price on the average than the operators of the Hocking Valley, when the price of digging in the two districts remains relatively as it now is, and that to raise the relative difference—five cents per ton—against the Jackson operators would put them to a disadvantage that would crowd them out of their present market, and be grossly unjust.

It may be conceded that the coal operators of Jackson county, with some exceptions, have been fairly successful since the opening of their coal field by the building of the Dayton & Ironton and Ohio Southern railroads, in 1878 and 1879, and that the development of that coal field has progressed rapidly since that period.

We gather, from the article referred to in the testimony of Mr. Roy, that in 1878 the shipments were only a few thousand pounds. In 1880 the output exceeded 150,000 tons; in 1882, it exceeded 300,000 tons; in 1883, the output was less than in 1882. Mr. Roy supposes this was so, because the railroads were too poor to supply the necessary cars for transportation. The total output of both lump and nut coal for 1884, in Jackson county, under the stimulus of the absence of production in the Hocking and Ohio Central districts, caused by the great strike of that year, was of both *lump* and nut coal 831,720 tons.

In 1885 the output receded, being of lump 641,419 tons and of nut 150,189 tons, aggregating 791,608 tons. (See Annual Report of State Mine Inspector for 1885,

p. 9.) In 1886 the output of lump was 717,516 tons, and of nut 139,224 tons, aggregating 856,740 tons, being an increase of a fraction over eight per cent. on the product of 1885, and about three per cent. on the product of 1884.

The Annual Report of the State Mine Inspector for 1886, p. 16, shows the comparative output of coal in 1885 and 1886 in the twenty-nine coal-producing counties of the state. It shows the average increase of output in the whole state over 1885 was about eight per cent., while in the counties of Perry, Athens and Hocking, composing the Hocking and Ohio Central districts, the increase over 1885 aggregated 510,111 tons, or nearly nineteen per cent.

The only matter relied on by the miners, as showing the general profitableness of mining in Jackson county, is the fact of the rapid and steady growth of this mining industry. Whatever weight may be given to this fact, it is conclusively shown that it differs but little in this respect from the other mining districts of the state, and is not nearly so prosperous as the very competitor with which it is compared.

It ought further to be remembered, that the fact of *continuous* operation is no evidence of *continuous prosperity or profit*, either with pig iron furnaces or coal mines. In both these industries stoppage for any considerable period is the synonym of loss. In the case of the furnaces, a blow out involves necessarily a new hearth, new in-walls, the reconstruction of many parts of the furnace and of the machinery, the dissolution of an organized business by the loss and separation of managers and skilled workmen, and the decay of building and machinery; so that furnace companies often consume the profits of prosperous years, in operating through a period of depression, in the hope that a period of prosperity will return. In such cases companies that are financially strong store their manufactured product for a better market in the future, and those that cannot do this sell from time to time at a loss, little or great, and incur and carry indebtedness, until the burden becomes too heavy to be borne or a fortunate turn of affairs gives them relief.

Coal operators pursue much the same course, except that they cannot get out their coal and store it, but they will submit to losses and consume former profits rather than close their mines, dissolve their working organization, and incur the inevitable damage that comes from falling roofs, the accumulation of water, the rusting of machinery, and the general decay that follows the omission of the constant watching and repair which are necessary when the mine is in operation. A stoppage often destroys the value of the entire plant, except what it will bring as a wreck. To keep the mine "*a going concern*" is a principal factor in its value.

It was, doubtless, for this and other reasons that by common consent both parties in this proceeding have not gone into an investigation of the entire past history of the mining business in Jackson county, but have limited the investigation to the period of eight months prior to December 1, 1886—the day on which the demand in controversy was made.

Mr. Victor Sullivan, page 447, was President of the Miners' Association in the Jackson county district and a member of the Executive Board of the Ohio Miners' Association. He was selected by Mr. Hysell, the Vice President of the Ohio State Miners' Association and then its acting President, as one of the five representatives of the miners in the Board of Arbitration for which the Umpire has now been chosen. Mr. Sullivan's testimony is interesting, as showing how the strike of December, 1886, was inaugurated, and what were the motives which prompted the miners to seek an investigation through the intervention of a Board of Arbitration. He says, on page 454, "My understanding was that the question submitted for arbitration was the relative difference in the cost of producing and selling coal, Jackson county coal, as compared to Hocking. My understanding all along was that if it cost Jackson county operators so much more than *they sold their coal for* to produce

it, than it cost the Hocking, then we didn't want any advance; that was our position from the start; we wanted to submit it to figures. I can say, as I understood it at the time, that we wanted to find out whether the operators could pay the advance or not."

It is evident that the stenographer and type-writer has misapprehended the language of Mr. Sullivan, and has, by misunderstanding or inadvertence, misplaced the above underscored words, and that to make sense the sentence should be, "that if it cost the Jackson operators so much more to produce it (the coal) than it cost in Hocking, then we did not want any advance."

This was undoubtedly one of the subjects to be investigated in the disposition of the question of advance.

The Board of Arbitrators being appointed, met on January 12, 1887, and were sworn as such, and as witnesses also. After the case had been opened by both parties a report was made on behalf of a joint committee previously appointed, on operators' statements, and an accountant was secured to examine the operators, books with the committee, and sixteen named mines were selected, whose books were to be examined as to the cost of production. Two of those were afterward dropped by consent. The royalty on coal mined, was fixed at twelve cents per ton; the proportion of lump and nut in the Hocking Valley was agreed to be one-fifth, or 20 cars of nut coal in every 100 cars of coal mined, and in Jackson county, as twenty-four cars of nut in every 100 cars of coal mined.

It appears that then the joint committee, consisting of Mr. Eben Jones on the part of the operators, and Mr. George Harrison on the part of the miners appointed "to verify the statements made by the operators," made their report on the statements of four of the mines, all of which are embodied in the bound volume of proceedings and testimony.

It further appears that pending the proceedings, "one George M. Jones was jointly selected by the miners and operators to investigate fourteen named mines (see his testimony p. 374), and for the purpose of ascertaining what the dead work was in Jackson, Wellston, and Coalton subdistricts taken all together." He, it seems was sworn before he made his investigation not to divulge the particulars of the business of the parties whose books he examined, except so far as might be embodied in his report. The results of his investigation were reported to the board, and his report appears on page 275.

It appears from this report that the number of tons of lump coal mined in the three subdivisions in eight months from April 1st to December 1, 1886, was 227,416 tons, and the total cost of putting it on the cars was made up as follows:

Amount paid miners.....	\$141,181 94
Cost of dead work, including \$3,600 of salaries (of tippers and weighers at dump)	98,552 93
Royalty on coal	27,289 98
	<hr/>
	\$267,024 85

Making the average cost of dead work, including the salaries named, forty-three and a third cents, and the average cost per ton on the cars \$1.17 $\frac{194}{227}$, or nearly \$1.18 per ton.

It must be remembered that the object of ascertaining the cost of lump coal on the cars, at the mines named, was to compare the same with the similar cost in the Hocking Valley. This latter was assumed to be, as stated by Mr. Hysell, the representative of the miners, in his presentation of their claim, as follows (see p. 3):

Dead work	25 cents per ton.
Royalty.....	10 cents per ton.
Mining	60 cents per ton.
Total	95 cents.

We beg to call the umpire's attention to the fact that Mr. Hysell in his testimony (p. 471), endeavors to show that the cost of putting coal on cars in the Hocking Valley should be increased to \$1.00 per ton, by reason of a supposed increase in the cost of dead work to 30 cents, instead of 25 cents per ton, which increase grows out of the fact that the price of digging had been raised from 50 to 60 cents, and this ten-cent increase in the cost of digging involved a five-cent increase in the cost of dead work. He forgets that his estimate of cost (95 cents) is based expressly on the 60 cents rate for digging, and is so named in his estimate (p. 3), and it is expressly stated in the argument in behalf of the miners before Judge Thurman that, "the cost of producing coal and placing it on the cars at the mines, according to agreed reports is, in the Hocking and Ohio Central (district) mining, 60 cents; royalty, 10 cents; *dead work*, 25 cents, or a total of 95 cents per ton." See ninth annual report of the Ohio Bureau of Labor Statistics, page 243. It was claimed by the miners that this 95 cents per ton excluded all cost of T rail and iron pipe, all loss on mules or live stock, used in the mines, all new coal buggies, taking the place of old ones, or any thing of continuous or permanent value, all office expenses and all salaries of superintendents, coal salesmen, or other officers or agents engaged in the business, except the salaries of weighers and tippers at the coal bank, and that to make the proper comparison these items were accordingly excluded from the statement made by the accountant of the above, giving the average cost per ton as \$1.18 nearly.

On the other hand, the Jackson county operators claim that all these items were included in the cost of dead work in the Hocking Valley, except the cost of T rails and the loss on mules, and therefore, the accountant makes a supplemental report (p. 395) which excludes only the T rails and mules, and also an item of \$2,158.72 paid for hauling coal outside of the Tropic mines; on this basis he makes the cost of putting a ton of a coal on the cars in Coalton and Wellston districts, as $\$1.25\frac{37}{100}$.

These results show that the cost of putting a ton of Jackson coal on the cars, on the basis claimed by the miners, is twenty-two and five-sixths cents, and on a basis claimed by the operators is $30\frac{1}{100}$ cents more than the like cost in the Hocking Valley. This difference is, however, to be reduced, by reason of a difference in quantity and value of the nut coal produced in the two districts.

In every 100 tons of coal produced in the Hocking Valley, it is agreed that twenty tons of it is nut or small coal; and in every 100 tons in the Jackson district, twenty-four tons of it is nut or small coal. The testimony shows that the average value of the small coal in Jackson county was $64\frac{1}{2}$ cents per ton, and of the Hocking small coal 60 cents per ton. The value of twenty-four tons of Jackson nut coal, at $64\frac{1}{2}$ cents, is \$15.44; the value of twenty tons of Hocking nut, at sixty cents, is \$12.00; making a difference in favor of Jackson coal, \$3.44; which, distributed among 100 tons of lump coal, is equal to $3\frac{44}{100}$ cents per ton. This deducted from the average cost per ton on Jackson lump coal, will make the actual cost on the cars $\$1.14\frac{4}{100}$ or $\$1.21\frac{33}{100}$, according to the two methods of estimating cost above referred to, miners and operators as compared with 95 cents, the alleged cost in the Hocking Valley.

See evidence of value of nut coal in Jackson district. H. L. Chapman, pp. 16 and 17; John Hall, p. 48; J. H. Cahoon, p. 49; J. Morrow, p. 39.

And as to the Hocking Valley nut. H. L. Chapman, p. 114; T. J. Morgan, pp. 190-191; J. J. C. Evans, p. 218; Jno. McBride, in Chapman's testimony, p. 363.

It is apparent, therefore, that the Jackson county operators, as compared with the operators of the Hocking Valley, are burdened with an excess of cost, of from $19\frac{4}{10}$ cents per ton to $26\frac{9.3}{100}$ cents per ton, according as you view such cost, from the different claims made by miners and operators respectively.

To ascertain the prices realized for the lump coal shipped from Jackson county in the eight months, from April 1st to December 1, 1886, sworn statements, made from nine different merchant or shipping mines, such as were regarded as fairly representing the entire district and covering the entire eight months, were introduced. These statements are found on pages 16, 17, 25, 39, 48 and 260 of the book of testimony. They make the average price at which the lump coal was sold F. O. B. *at the mines*, to be $\$1.04\frac{1}{9}$, so that, if nothing beside lump coal had been produced and sold, the business would have resulted in a loss to all operators.

It is, therefore, proper to consider here, that revenue was derived not only from the sale of lump coal, but also from the sale of nut coal, and that some of the operators also derived a revenue from the rent of the houses built for the accommodation of the miners, or from merchandise sales, and that some six mining companies were also the owners of furnaces in which coal was used for smelting iron ore. The three last named sources of revenue, although indirectly connected with the coal traffic, should, nevertheless, stand each upon its own foundation, and be credited or debited with its own profit or loss. They each have their own risks to run, particularly the mercantile and manufacturing enterprises, in which the hazards are great; and which in closing them up, when the mines are worked out, must be the occasion of large loss, which cannot now be known, but which must necessarily have the effect to reduce any current profits. It is, therefore, unjust to the operators to give to the coal traffic the credit of profits derived from these sources. The profit of coal mining should be limited to the revenue derived from the sales of lump and nut coal. So limited, it is apparent from the testimony that the business was not a profitable one in 1886 in Jackson county.

It is shown that the average cost of putting a ton of lump coal on the cars for eight months of that year was nearly $\$1.18$, and that the average amount realized per ton for lump coal for the same eight months was $\$1.04\frac{1}{9}$, being a deficit of $13\frac{8}{9}$ cents on the ton.

The total quantity of lump coal mined in Jackson county in 1886, according to the Twelfth Annual Report of the State Mine Inspector, p. 16, was 717,516 tons, which at $13\frac{8}{9}$ cents per ton would make a total deficit on lump coal of $\$99,591.22$; the sales of nut coal for the same year, according to the same report, amounted to 139,224 tons, average price for eight months $64\frac{1}{3}$ cents, $\$91,467.44$; making a net loss on coal sales, of $\$8,023.78$. If we take the average cost of putting the lump coal on the cars to be as claimed by the operators, namely, $\$1.25\frac{37}{100}$ instead of $\$1.18$, the loss will be much larger.

It is no doubt true that if, in ascertaining the average price at which lump and nut coal was sold per ton, the whole twelve months of the year had been taken into consideration, instead of limiting the inquiry to the eight months preceding December 1, 1886, the average price at which the coal was sold would have been increased and the loss diminished. It must not be forgotten, however, that owing to the strike of December 1, 1886, no mining was done until the 20th of that month, and that practically the entire month was thereby lost to the operators. On any supposition that can reasonably be made upon the testimony in the case, it is apparent that the coal business of the county, taken as a whole, was not a profitable one, and in some cases was done at a loss.

See E. W. Redding, p. 273, as to the Southern Ohio Coal and Iron Company; George M. Jones, p. 384; John J. C. Evans, p. 206.

Much effort is made by the miners to show the higher prices that prevailed in October and November, 1886, and later. Admit that there was an improvement for the fall and winter months, as is generally the case, still up to December 1st the losses of the spring and summer had not been overcome, and if they had been, it is not shown that at any season of the year the operators of Jackson county were able to realize any more for coal *than their brethren in the Hocking Valley*. To this we call further attention.

It is well stated by Mr. McBride, Mr. Hysell and others, in their argument submitted to Judge Thurman on behalf of the miners in December, 1885, (see Ninth Annual Report of Labor Statistics for 1885, p. 242), that "there are three separate and almost distinct trades: the lake—the largest, the manufacturing and the domestic," and that at certain seasons of the year the greatest portion of all trade is reached by shipment on the lakes.

To this we may add *the demand for use in the iron furnaces*. The testimony of Mr. Willard is that from twenty-five to thirty per cent. of the entire product of Jackson county was for furnace use. Mr. Chapman gives the quantity (p. 373) as from twenty-five to thirty-two per cent. J. H. Cahoon (p. 49) fixes the price of this furnace coal at \$1.00 per ton at the furnace. Moses Morgan testifies (p. 93) that the proportion of the coal product of Jackson county that is used for manufacturing and steam purposes during the winter season is from sixty-five to seventy per cent., and in the summer season about ninety per cent. (This, of course, includes the coal used in the manufacture of iron at the furnaces and for making steam in running railroad trains.) E. W. Redding (p. 47) puts sixty to seventy per cent. of the output of all the mines in the Southern Ohio Coal and Iron Company as being sold for steam purposes in winter and at ninety per cent. in summer.

Judge Evans (pp. 206 and 207), Eben Jones (p. 265), H. L. Chapman (p. 373), and other witnesses confirm these statements. So that we may assume that the Jackson coal fields in summer time gives ninety per cent. of its products to manufacturing and steam purposes, and ten per cent. to domestic use, and in the winter time sixty-five to seventy per cent. to manufacturing and steam purposes and, thirty to thirty-five per cent. to domestic use.

The evidence shows that the coal used for manufacturing and steam purposes is usually sold under contracts for yearly periods, and at less prices, probably not over \$1.00 per ton at the mines, and it also shows that at Dayton, Springfield, Indianapolis and Toledo, or wherever it comes in competition with the Hocking coal, it is obliged to be sold at about the same price with the latter. See the evidence of T. J. Morgan (p. 187) a Springfield dealer, H. L. Chapman (pp. 233 and 234), who gives quotations from many towns and places showing that the selling prices of Jackson coal and Hocking coal are about the same.

E. W. Redding, pp. 35, 36 and 37; T. J. Morgan, of Wellston, p. 26, who shows that Jackson coal cannot be sold in Cincinnati in competition with the Ohio River coals; E. T. Jones, pp. 253 and 254. Eben Jones, pp. 266, 267 and 268, furnishes comparisons for Toledo, Detroit, Dayton, Indianapolis, Chicago, Elkhart, Kalamazoo, Battle Creek, Hamilton, Xenia and other points.

In opposition to this Mr. Hysell, on March 23, 1887, was introduced as a witness in behalf of the miners. He produced (p. 470) a coal trade journal known as the "Black Diamond," published in Chicago. Mr. Chapman had previously referred to the quotations in the same journal for the month of December, 1886, which quotes the then prices as follows:

Chicago—Hocking Valley.....	\$3 20 per ton, car load lots.
Jackson Hill coal.....	\$3 15 to \$3 25 per ton.

Dayton—Hocking Valley lump	\$2 45
Jackson lump	2 65
Hocking nut	2 05
Jackson nut	2 00

Mr. Hysell produces the February and March numbers (1887) of the same journal, quoting prices for February, as follows:

Chicago—Hocking Valley lump	\$3 45
Jackson lump	3 45
Dayton—Hocking Valley lump.....	\$2 45
Jackson lump..	2 65
Hocking nut.....	2 05
Jackson nut	0
Detroit—Hocking Valley lump	\$4 00
Jackson lump.....	\$4 00 and \$4 50
Hocking nut	3 50
Jackson nut, not quoted.	

Toledo—Hocking Valley lump	\$2 50
Jackson lump.....	3 10

For March, 1887, Mr. Hysell quotes as follows:

Chicago—Hocking lump.....	\$3 20
Jackson lump	3 45
Dayton—Hocking lump	\$2 40
Jackson lump.....	2 50
Detroit—Hocking lump	\$4 00
Jackson lump.....	\$4 00 and \$4 50
Toledo—Hocking nut	\$2 25
Jackson nut..	2 50
Jackson lump	2 75
Hocking lump, not quoted.	
Indianapolis—Hocking lump.....	\$2 75
Jackson lump.....	2 75

Mr. Hysell is entirely ignorant of two important elements in fixing the selling price in the markets to which he refers, to-wit, the railroad charges for transportation from the mines to the market, and the switching charges at the place of destination. These charges vary both as to places and the date of transportation.

Mr. Eben Jones shows (p. 266-7) that the charges to Indianapolis are the same, and hence the selling price at Indianapolis is the same for both coals. The same fact is true of Chicago, until March, 1887. Mr. Moses Morgan (p. 493-4) explains the difference in the Chicago quotations for March, 1887, by showing that the rate of freight on the Jackson coal to Chicago was raised 25 cents per ton, and no advance made on the Hocking rates. Hence the price of Jackson coal in Chicago was raised 25 cents per ton, and the effect was *to shut the Jackson coal out of that market*.

Mr. Morgan further explains the difference of ten cents per ton in the March quotations at Dayton, from the fact, that the Hocking reduction from previous prices, was made a few days earlier than the reduction in Jackson, and one got into the papers and the other did not. After both were reduced, the selling price was the same. Mr. Eben Jones (p. 266) gives the railroad freight from Hocking to Toledo as \$1.00 per ton; from Jackson, \$1.30 per ton; from Hocking to Detroit, \$1.40 per ton, from Jackson, \$1.65. If the rates of freight and switching charges were known, it would be found in every case that the Hocking operators can put their coal into all the markets named, at a less cost than the Jackson operators can possible do.

Much testimony is accumulated as to the reasons why the Jackson coal, pure as it is, does not come into general use for domestic purposes, chiefly because it slacks badly, and will not bear handling or storing. That fact is settled beyond a doubt. Many of the witnesses of large business experience, and large interests in Jackson county, testify under the solemnity of their oaths to their conviction as to the fatal results of the proposed discrimination in the price of mining between their county and the Hocking Valley. This may be, or may not be an unfounded apprehension, but it is honestly entertained and deserves serious thought.

We desire also to emphasize strongly the fact, that in none of the calculations made as to the cost of coal on the cars, has any attention been given to, or any allowance made, for interest on the large amount of capital invested in the forty-five mines of Jackson county, nor for the personal labor and attention given the entire business by the officers of the principal companies owning and operating the mines, nor any thing for the depreciation of the mine plant of every description, all of which should be considered in determining what is reasonable profit in any business.

It is quite evident that the demand of the miners of the Jackson county district for a further relative difference over the prices of digging in the Hocking Valley, was the result of a misapprehension on their part. They had seen the operators of their district, with seeming cheerfulness, submit to be governed by the prices fixed in the Hocking Valley, not only at the fifty-cent rate as the result of the great strike of 1884, but also at the advanced rate of sixty cents established at the beginning of 1886. They were ignorant of, and did not notice the struggle of their employers to keep their mines in operation, during the spring and summer of 1886, a period of low prices, but they were quick to observe the increased demand for coal, and the higher prices that were obtainable, during the months of October and November of that year under the stimulus of low water in the Ohio River, which drew off the competition of Ohio River coal from many points in southern Ohio and Indiana, and also as the result of a *partial* recovery from the business stagnation which had prevailed generally throughout the country; both of which causes gave a temporary animation to the coal trade of the Jackson district, and inspired the operators with the belief, that notwithstanding the existence of their contracts for future delivery of coal at the low prices of a spring and summer, they would now be able to repair their losses, and return to a steady business at fairly remunerative prices. The natural promptings of our human nature are always quick to seize the advantage of a favorable opportunity, and the miners, formidable in the strength of their local unions, and backed by the mighty power of their state organization without *first* asking to submit the question to arbitration, inaugurated the strike of December the 1st, 1886. If there had been any just foundation for it, the then temporary activity in the coal traffic might have induced submission to it, by the operators, rather than subject themselves to the inconvenience and losses of even a temporary stoppage in both the coal and iron industry of that region, and in the traffic on which the railroads were largely dependent. Their subsequent agreement to submit the question to arbitration and to have the matter fully investigated, is proof of their confidence in the justness of their cause.

Mr. Hysell makes a significant admission in his closing testimony, taken in connection with Mr. Sullivan's statement in his testimony (p. 454-5), that the object of the demand of the miners was to ascertain by investigation and figures, whether it was true that it cost the Jackson county operators so much more to produce their coal, than it cost the Hocking Valley operators to produce theirs, as compared with the selling prices in the markets reached by both. And that, if such were the fact, then they did not wish the advance. Mr. Hysell (p. 471) frankly admits, that in making their estimate of the cost of dead work in

the Jackson county district, the miners were "governed a great deal by guess;" but he says, "since then (as the result of the investigation), of course, *we have found that the dead work is higher by actual investigation.*" This is the answer to the original guess which prompted the strike.

In view of the results of the investigation, we venture to declare our profound conviction that the miners of the Jackson district themselves are satisfied. Their demand, however honestly made at the beginning, was in fact made under a mistake, and that nothing but the natural dislike to submit to a supposed defeat has prevented an abandonment of their claim for an advance. We say, a *supposed* defeat, for in fact an acquiescence in the relative prices heretofore existing in the two districts named, will mean for the miners, if no backset comes from other quarters, continuous work at fair wages, and therefore, success and victory.

It must be remembered that this is not a general demand for an advance in miners' wages, but a demand for a *discrimination* against the operators in Jackson county in favor of the operators in the Hocking Valley; a discrimination, which if allowed, would be manifestly unjust, because the Jackson operators, with the price of digging at Wellston and Jackson the same as in the Hocking Valley, and at Coalton five cents in advance, are *already* at a great disadvantage. The thinner seams of the Jackson district give a less quantity of coal to the acre, and this fact necessarily shortens the period in which the original investment in plant and works must be returned to them or be partially lost. The same fact of thinner seams involves the operators in a heavier cost for all "dead work" to get out the *same quantity of coal*; for one yard of entry in the Hocking district, two or three are required in the Jackson district. A large amount of slate or rock must be taken up from the bottom, or down from the top of the entries; a large amount of work which is done by the miners in the Hocking Valley district is in the Jackson district done by the operators, or at their cost; the greater distance of the Jackson field from the northern lakes, and from the great markets in lake ports, in the northwest generally, and the comparative isolation of the Jackson field, is greatly to its disadvantage. To make the further discrimination now demanded will now accomplish what was sought to be accomplished by the Hocking Valley operators in the Joint State Convention of Operators and Miners in February, 1886. The evidence in this proceeding clearly shows that a resolution was introduced before that convention in behalf of the Hocking Valley operators, and laid on the table on motion of Mr. McBride, the chief representative of the miners. If it were unjust or impolitic then to make such discrimination, what changes have taken place to make it just and politic now?

Let the present strike succeed, and if not followed by loss and disaster to the mining industries of Jackson county, how long will it be before a strike will occur in the Hocking Valley on the ground that if the operators in Jackson county can live at prices for digging five cents higher in Jackson and Wellston subdistricts, and ten cents in the Coalton subdistrict, with all the disadvantages that we have enumerated, certainly the Hocking Valley operators, with their greater advantages of location and thick seams, can stand the same advanced price. Thus the process of advancing prices by the artificial and arbitrary methods of strikes, indefinitely, may go on disturbing the industries of the state, discouraging the investment of capital, and finally bringing disaster upon the miners themselves. Is it not better to let the matter rest under the adjustment which time and experience have brought about, and under which the miners of Jackson county have satisfactorily wrought for the last seven years,—under which many of them acquired and paid for homes of their own, and have enjoyed a more uniform prosperity than any miners of the state? (See Mine Inspector Roy's testimony.) The maxim, "let well enough alone" may here be well applied.

The important fact should not be forgotten, that the present is a critical period in the history of coal mining operations. The recent discoveries of natural gas and petroleum in the region where coal has heretofore found an inviting market, and the adaptation of both these commodities to economic uses, stares both operators and miners in the face as a threatening element of serious proportions. Is it prudent now to demand advances, or to lay any additional burdens upon the operators of Jackson county, since they can only maintain their position by the exercise of their utmost energy and the practice of the utmost economy?

We beg to apologize for the length of the statement and argument now submitted. We have not been permitted to see the argument in behalf of the miners, as they preferred that both sides should submit their case without the knowledge of what might be said in opposition. We have, therefore, been obliged to rely upon conjecture as to the points made by our adversaries, and for this reason much of our argument might have been omitted.

We beg the umpire also to remember that the question submitted, and the proof taken, involve only a comparison between the Hocking Valley and the Jackson county districts. If any attempt shall be made to go outside of these districts, and to show that coal mining is apparently carried on with success in some districts where higher prices are paid for digging than are paid in Jackson county,—and from this to draw an inference that the latter should be raised on general principles, irrespective of the price in the Hocking Valley,—such attempt is wholly outside of the question submitted, and outside of the range of the testimony taken. For instance, if an attempt shall be made to show that such higher prices are paid for digging in the Massillon and in the Mahoning (or Youngstown) districts, it would be easy to show that those districts, by reason of their proximity to Cleveland, command an immense domestic (or house use) and local trade. These coals are near to market, with a short haul and correspondingly low rate of freight. They are used almost exclusively for domestic purposes. They are in such demand that the land owners are able to lease their coal on a royalty of from forty cents to fifty cents per ton, as against ten cents or twelve cents in Jackson county.

Take, also, the block coal field of Indiana. It is near the large city of Indianapolis, with an immense demand and a short haul. It also reaches the great Chicago market, the greatest of all coal markets, on a comparatively short haul and with a freight charge of only \$1.00 per ton.

It is manifestly unjust to compare the Jackson county field, with its disadvantages and remoteness from the markets of the coals just referred to, (and also compelled to meet the Hocking Valley coal, as its first competitor, in its own natural market), with the districts named, or any similarly situated.

Before closing we beg to enter a distinct and emphatic disclaimer as to the correctness of Mr. Hysell's statement, beginning on page 469 of the book of testimony, relating to the written agreement to submit the question in dispute to arbitration. It is said that this written agreement cannot now be found. We challenge its production. If produced it will be found to be in the handwriting of Mr. H. L. Chapman, and signed by him in behalf of the operators. He emphatically declares that by its terms the decision of the Board of Arbitrators, to whom such question was submitted, was to be final, and no agreement was made that the same was to be "subject to rules of the joint body of operators and miners"; and if any such language now appears in said agreement it is an unauthorized interpolation, made without his knowledge or consent, and without the knowledge or consent of the operators whom he represents, and in such case Mr. Hysell has doubtless been imposed on by some outside party. Neither was it understood and agreed that Mr. Hysell signed said agreement in behalf of any one except the miners who were locally and directly interested in the question submitted. He did not sign said agreement on behalf of

the miners "of Ohio," and if the agreement now shows the words "of Ohio" at the end of his signature, these words were added after the original signing and without the knowledge or consent of Mr. Chapman, who represented the operators in that transaction.

Mr. Chapman was absent from Ohio from March 11, 1887, to April 16, 1887. It was during this absence that Mr. Hysell was introduced as a witness, namely, on March 23, 1887, and referred to the agreement in question. This disclaimer would have been then made, had he been present, or in any manner advised that any such claim was made.

H. L. CHAPMAN,

June 1, 1887.

On behalf of the operators of Jackson county.

DECISION OF JUDGE TAFT.

The following is the full text of the decision :

GENTLEMEN: I have received the arguments and the printed evidence which you have submitted to me as umpire. The question, as I understand the case, is whether under all the circumstances which the evidence discloses the rule of miners' wages in Jackson county shall be so changed that in the subdistricts of Wellston and Jackson the miners shall receive five cents, and in the subdistrict of Coalton ten cents more per ton than is paid to miners in the Hocking Valley district. The Hocking Valley district, consisting of the counties of Hocking, Perry and Athens, is No. 1 of the Ohio mining districts, and Jackson county, including the three subdistricts of Wellston, Jackson and Coalton, constitutes the Seventh mining district of Ohio. It appears from the evidence that from the beginning of mining coal in Jackson county down to 1880 the rule of prices for mining in the First and Seventh districts was the same. In 1880 the miners in the Coalton subdistrict of Jackson county demanded that there should be allowed them, on account of the thinness of their mines and greater difficulties of mining, five cents per ton more than was paid in the Hocking Valley district and in the other subdistricts of Jackson district, and they struck for this advance. The operators yielded, and all parties concerned appear to have acquiesced in that difference in their favor from that time to the present. With that exception the rule of prices has remained the same in these two districts down to the year 1887.

In May of 1883, at a convention of the miners of the state held in Columbus, in view of the struggle of the different districts to get the advantage of each other in the cost of coal, was adopted the following resolution, viz.:

"WHEREAS, The prices for mining in the different districts of this state having adjusted themselves, after years of experience, upon a basis which both miners and operators of mines acknowledged to be a fair basis, and whereas, the indiscriminate fight carried on by the miners to advance and the operators to reduce the price of mining is alike injurious to miners and operators, therefore,

"Resolved, That we recognize existing prices as a basis for future action."

In June, 1884, the miners and operators of the Coalton subdistrict of Jackson county came to a settlement of their differences on several points, and reduced their agreement to writing, and had it executed by committees assuming to represent the respective parties. It is not necessary to give a copy of that instrument, further than to give the first of the seven rules adopted by it, viz.: "Rule 1—The price paid for mining shall be five cents per ton above Hocking Valley prices." The question submitted to me has no reference to the absolute price to be paid in either district for mining, but only how much, if anything, shall be paid per ton for mining in Jackson district more than in the Hocking Valley district.

I have said that the price of mining in the First and Seventh districts has been the same except the advance of the five cents to the miners of Coalton subdistrict made in 1880. It is claimed, however, that there is an exception. In the year 1884 after the long strike of Hocking Valley, there was a reduction of wages to fifty cent

per ton, and it has been claimed on behalf of the miners that the reduction in Hocking Valley was to be to forty cents per ton, while the reduction in Jackson was only to fifty cents per ton. The evidence on the point of this exception is somewhat conflicting. There is no claim that in Jackson the rate was ever lower than fifty cents, but that inequality, if it ever existed, was but for a very short time, and it is impossible to find from the evidence that the Jackson miners and operators recognized any difference between the prices they were paying and receiving and those which were paid by the operators in Hocking Valley.

In the month of November, 1885, the miners of Hocking Valley demanded an increase of ten cents per ton, raising the price to which it had been reduced after the great strike of '84, from fifty to sixty cents per ton. The question was submitted to arbitration, and the arbitrators not agreeing, Judge Thurman was chosen umpire. His award was in favor of the miners, fixing the rule of wages of the miners in Hocking Valley at sixty cents. That rule was followed by the miners and operators in Jackson county, with the five cents difference in favor of the miners in the Coalton subdistrict. There seems to have been an understanding among the miners and operators of Jackson county that when there was difficulty in the Hocking Valley the miners in Jackson county should work on till the difficulty was settled, and then follow the rule adopted in the Hocking Valley, with the five cents in favor of the miners of the Coalton subdistrict, as before stated. It is claimed on behalf of the operators that the agreement to which I have referred was perpetual, and, therefore, that we should go no further, but hold the question as to the relative prices of mining in the two districts settled.

It is true that there is no express limit in time in the agreement of 1884, nor in the resolution of 1883. But taking into consideration the fact that these parties are not incorporated and are subject to constant changes in their membership, and that the formal written agreement of 1884 in terms applied only to the miners of the Coalton subdistrict, I do not think that the agreement of 1884 or the resolution of 1883 can be regarded as binding in perpetuity. It is evident that many of the miners were not fully aware of its existence, or of its actual purpose; nevertheless the fact that such understanding existed, and that there was a general acquiescence in it at the time, is a strong circumstance to show the supposed reasonableness of the rule at that time, and it would seem to be fair to expect that the miners or the operators before asking a change should either show that it was originally wrong, or that circumstances have been so changed as to make it no longer right.

This brings us to the evidence and the arguments on the main question. It is gratifying to observe in the testimony, and in the very able arguments which have been presented to me in this case, that the investigation has been carried on in good temper, and that there is nothing malicious on either side. The miners evidently do not desire to exact from the operators more than they can afford to pay, and the operators do not desire to deprive the miners of fair wages. Looking at the subject from different standpoints, their opinions necessarily sometimes differ. I have read and re-read the testimony which has been submitted to me, together with the voluminous documents accompanying, and have studied the whole subject as carefully as I knew how to do. I have considered the different qualities of the different coals, and their relative values in the markets, the relative thickness of the mines in the Jackson and in the Hocking Valley districts, and the comparative difficulties in working them; the daily wages of the average industrious miners in both the First and the Seventh district, and the practical facilities of obtaining work, the amount and cost of dead work incident to the operation of mines in each of said districts, and how it affects their ability to compete in the markets; the amount and quality of the nut coals in the two districts, and what advantage the Jackson county operators derive from the greater quantity of nut coal which goes to them; the opinions of the witnesses as to the effect of the increase asked for in the relative prices of digging coal in Jackson county upon the business of coal mining in Jackson county,

and every other point and fact presented in the evidence and in the arguments, and my conclusion is, that, on the evidence, I cannot justly award to the coal miners of Jackson county the increase in the wages which they ask above the Hocking Valley prices.

ALPHONSO TAFT.

CINCINNATI, O., August 8, 1887.

THE TWO WEEKS PAY LAW.

The General Assembly, at its last session, passed what is known as the Cope bill, providing for the semi-monthly pays in the mining counties. This law was to go into effect on August 1st. Prior to that date the operators of Jackson county and the Hocking Valley posted at all their mines the following notice:

"Whereas, it is impossible, as our business arrangements are established, for us to pay our employes as often as every two weeks, notice is hereby given that we will hereafter settle with all employes monthly, as heretofore. All employes continuing in the service or employment [of this firm after August 1, 1887, will be held to have expressly agreed to the terms above stated, and by such continuance they will severally incorporate said terms of payment into their contracts of service with the firm."

Whereupon, the miners, having made their demand for the two weeks pay, as required by the bill, struck and refused to work. After about three days idleness the matter was adjusted, their demands complied with, and work resumed, and at this writing, it is believed, that wherever asked for this form of payment is now in vogue throughout the state.

A general demand for a two weeks pay law seems to have been made throughout most of the coal mining states during the past year. Such bills were passed by the states of Pennsylvania, West Virginia, Ohio and Indiana, while in Illinois and Iowa similar bills were introduced in their legislatures, but failed of passage. As showing the general similarity of the bills passed in the four states mentioned above, a copy of each is here inserted:

TWO WEEKS PAY LAW OF OHIO.

AN ACT

(Passed March 21, 1887.)

To secure prompt payment of wages to certain employes twice in each month.

SECTION 1. *Be it enacted by the General Assembly of the State of Ohio,* That where the majority of the employes who receive their pay at one office of any person, firm, company or corporation, which is engaged in mining, manufacturing or mechanical business, shall make demand in writing, to be paid their wages twice in each month thereafter, and their contracts with their employers are silent with reference to such time of payment, then in such case said person, firm, company or corporation shall pay such wages as shall be earned up to the sixteenth day of each month, not later

than the twenty-fifth day of said month, and the wages earned up to the end of the month, not later than the tenth day of the following month, in lawful money; provided, that such payment be made by check, draft or order, payable in lawful money, at sight or on demand, on a bank located at a distance not greater than eight miles from the place where said labor is performed. And provided further, that said employer may retain at each payment any amount said employe may order withheld from his wages, for rent, powder, tools, tool-sharpening or oil, and rent, powder or oil due said employer.

SECTION 2. In case any person, firm, company, or corporation mentioned in the first section of this act neglects or refuses to pay such wages at the time prescribed, when demanded, and when the contract is silent as to time of payment, said employe shall have the right to recover of said employer the amount due, with a penalty of ten per cent., together with interest upon [the] whole amount due, including penalty, until the same is paid.

SECTION 3. This act shall take effect on the first day of August, 1887.

THE TWO WEEKS PAY LAW OF INDIANA.

(Approved February 14, 1887.)

SECTION 1. *Be it enacted by the General Assembly of the State of Indiana,* That every corporation, association, company, firm or person engaged, in this state, in mining coal, ore or other mineral, or quarrying stone, or in manufacturing iron, steel, lumber, staves, heading barrels, brick, tile, machinery, agricultural or mechanical implements, or any article of merchandise, shall pay each employe of such corporation, company, association, firm or person, if demanded, at least once every two weeks, the amount due such employe for labor, and such payment shall be in lawful money of the United States, and any contract to the contrary shall be void.

SECTION 2. That any person, copartnership, corporation or association, or any member, agent or employe thereof, who shall publish, issue or circulate any check, card or other paper, which is not commercial paper payable at a fixed time in any bank in this state, at its full face value, in lawful money of the United States, with eight per cent. interest, or by bank check or currency issued by authority of the United States Government, to any employe of such person, copartnership, corporation or association, in payment for any work or labor done by such employe, or in payment for any labor contracted to be done by such employe, shall be guilty of a misdemeanor, and, upon conviction thereof, shall be fined in any sum not more than one hundred dollars.

SECTION 3. It shall be unlawful for any corporation, company, association, firm or person described in section one (1) of this act, or the officers and agents of such, to sell, directly or indirectly, to any employe of such corporation, association, firm or person, any merchandise or supplies at a higher price than such merchandise or supplies are sold by such corporation, company, association, firm or person to others for cash.

SECTION 4. Every corporation, company, association, firm or person who shall fail for ten days after demand of payment has been made to pay employes for their labor, in conformity with the provisions of this act, shall be liable to such employe for the full value of his labor, to which shall be added a penalty of one dollar for each succeeding day, not exceeding double the amount of wages due, and a reasonable attorney's fee, to be recovered in a civil action and collectible without relief.

SECTION 5. Every corporation or person who knowingly and willfully violates any of the provisions of section three (3) of this act, shall be deemed guilty of a misdemeanor, and upon conviction shall be fined in any sum not less than five nor more than one hundred dollars.

SECTION 6. This act shall not in any way affect the liens of laborers, as now secured to them by the laws of this state.

THE TWO WEEKS PAY LAW OF WEST VIRGINIA.

(Passed February 25, 1887.)

SECTION 1. *Be it enacted by the Legislature of West Virginia,* That all persons, firms, corporations or associations in this state, engaged in mining coal, ore or other minerals, or mining and manufacturing them, or either of them, or manufacturing iron or steel, or both, or any other kind of manufacturing shall pay their employes as provided in this act.

SECTION 2. All persons, firms, companies, corporations, or associations engaged in the business aforesaid, shall settle with their employes at least once every two weeks, unless otherwise provided by special agreement, and pay them the amount due them for their work or services in lawful money of the United States, or by the cash order as described and required in the next succeeding section of this act. Provided, that nothing herein contained shall affect the right of an employe to assign the whole or any part of his claim against his employer.

SECTION 3. That it shall not be lawful for any persons, firm, company, corporation or association engaged in the business aforesaid, their clerk, agent, officer or servant, in this state, to issue for the payment of labor, any order or other paper whatsoever, unless the same purports to be redeemable for its face value, in lawful money of the United States, bearing interest at the legal rate, made payable to employe or bearer and redeemable within a period of thirty days by the persons, firm, company, corporation or association giving, making or issuing the same. And any persons, firm, company, corporation or association, engaged in the business aforesaid, their clerk, agent, officer or servant, who shall issue for payment of labor any paper or order other than the one herein specified in violation hereof, shall be guilty of a misdemeanor, and upon conviction thereof shall be fined in any sum not less than twenty-five dollars nor exceeding one hundred dollars, in the discretion of the court.

SECTION 4. That from and after the passage of this act it shall be unlawful for any person, firm, company, corporation or association engaged in mining or manufacturing, either or both as aforesaid, and who shall likewise be interested, directly or indirectly, in merchandising, as owner or otherwise, in any money, per cent. profit or commission arising from the sale of any such merchandise, their clerks, servants, officers or agents, to knowingly and wilfully sell or cause to be sold to any employe any goods, merchandise or supplies whatsoever, for a greater per cent. of profit than merchandise and supplies of like character, kind, quality and quantity are so sold to other customers buying for cash and not employed by them; and shall any persons or members of any firm, company, corporation or association, his or their clerk, agent or servant, violate this section, then and in that case such persons, firm, company, corporation or association shall collect for such merchandise and supplies only the price for which like merchandise and supplies are sold by them to such other customers as aforesaid buying for cash, and moreover shall be guilty of a misdemeanor, and on conviction thereof shall be fined not exceeding one hundred dollars nor less than twenty-five dollars.

SECTION 5. That if any firm, company, corporation or association shall refuse for the space of twenty days to settle and pay any of their said employes at the intervals of time as provided in section two, of this act, or shall neglect or refuse to redeem any cash orders herein provided for within the time specified, if presented, and suit should be brought for the amount overdue and unpaid, judgment for the amount of said claim proven to be due and unpaid, with legal interest thereon until paid, shall be rendered in favor of the plaintiff in such action. Provided, further, that the cash order, herein provided for, given for payment of labor, if the laborer continues to hold the same, in case of the insolvency of the company, or persons,

or firm, or corporation giving same, such laborer shall not lose his lien and preference under existing laws.

THE TWO WEEKS PAY LAW OF PENNSYLVANIA.

(Approved May 23, 1887.)

SECTION 1. *Be it enacted, &c.*, That from and after a period of two months subsequent to the date of the passage of this act every individual, firm, association or corporation employing wage-workers, skilled or ordinary laborers engaged at manual or clerical work, in the business of mining or manufacturing, or any other employes, shall make payment in lawful money of the United States to the said employes, laborers and wage-workers, or to their authorized representatives; the first payment to be made between the first and fifteenth, and the second payment between the fifteenth and thirtieth of each month, the full net amount of wages or earnings due said employes, laborers and wage-workers, upon the first and fifteenth instants of each and every month wherein such payments are made; and in case any individual, firm, corporation, association or other employer shall neglect or refuse to make payment, upon the dates herein set forth, to wage-workers, laborers or other employes, employed by or with the authority of such individual, firm, corporation, association or other employer, then such amount of wages or earnings shall be and become a legal claim against such individual, firm, corporation, association or other employer, and shall be recoverable by law, with interest from the date such amount is due.

SECTION 2. All acts, or portions of acts, in conflict or inconsistent with this act be and the same are hereby repealed.

FINANCIAL STATEMENT.

At the first session of the last General Assembly an appropriation was made for attorney's fees, for the use of the department, of one hundred dollars. Of this sum there has been the following amounts expended during the year, viz.:

To B. M. Campbell, of Youngstown.....	\$25 00
To Hollingsworth & Rees, of Flushing, on account	50 00

This leaves a balance in hand belonging to this fund of twenty-five dollars, but against this is the balance of the bill of Messrs. Hollingsworth & Rees, yet unpaid, of fifty dollars, thus leaving a deficiency of twenty-five dollars in this fund for which an appropriation is asked, as also an additional amount of two hundred dollars to keep the fund up to the usual amount heretofore appropriated for its use.

The following statement shows the expenditure for office and contingent expenses of the department during the year.

OFFICE EXPENSES FOR THE YEAR ENDING NOVEMBER 15, 1887.

1886.	
November.	Telegraphing\$ 1 41
	Postage stamps 20 00
	Henry Falkenbach, janitor..... 2 50
December.	Expressage..... 35
	Postage stamps 50 00
	Henry Falkenbach, janitor 5 00
	Washing towels..... 50

1887.	
January.	Expressage 2 20 Postage stamps 50 00 Rent of post-office box 2 00 Henry Falkenbach, janitor 2 50
February.	Postage stamps..... 40 00 Telegraphing 50 Henry Falkenbach, janitor..... 1 00 C. E. Moore, janitor..... 5 00 Riddle Ice Co., for ice..... 12 00
March.	Postage stamps 45 80 Telegraphing 3 35 W. A. Shore, janitor 5 00
April.	Postage stamps 25 00 Rent of post-office box 2 00 Letter scales..... 75 Hatchet 50 W. A. Shore, janitor 5 00
May.	Postage stamps 130 00 Expressage..... 70 Telegraphing 5 56 Washing towels..... 1 20 W. A. Shore, janitor 5 00
June	Postage stamps 10 00 Rent of post-office box 2 00 Repairs to barometer..... 1 80 Telegraphing 2 84 United States Express Co 2 60 Adams Express Co 4 75 Riddle Ice Co., for ice..... 3 35 W. A. Shore, janitor... 5 00
July.	Postage stamps 29 25 W. A. Shore, janitor 5 00 Western Union Telegraph Co 4 40 United States Express Co 2 25 Baltimore & Ohio Express Co 1 30 Adams Express Co..... 3 90
August.	Expressage 1 10 Postage stamps 25 00 W. A. Shore, janitor..... 5 00
September.	Postage stamps 8 00 Expressage'..... 1 05 W. A. Shore, janitor..... 5 00 Instruments, bill of L. Manasse..... 63 00 Repairs to barometer..... 6 50
October.	Postage stamps 98 00 Rent of post-office box 2 00 W. A. Shore, janitor 5 00 Typewriting for report 4 40 Telegraphing 2 35 Expressage 25
November.	Postage stamps 25 00 W. A. Shore, janitor 2 50 Telegraphing 3 85 Expressage 6 35
Total .....\$767 61	

TRAVELLING EXPENSES OF T. B. BANCROFT, CHIEF INSPECTOR, FOR THE YEAR ENDING
NOVEMBER 15, 1887.

1886.		
November.	Railroad fare	\$16 20
	Hotel bills.....	12 00
December.	Railroad fare	40 40
	Hotel bills.....	17 00
1887.		
March.	Railroad fare	16 60
	Livery	4 50
	Hotel bills.....	12 00
April.	Railroad fare	35 50
	Livery	2 00
	Hotel bills.....	24 00
May.	Railroad fare	31 75
	Livery.....	2 00
	Hotel bills.....	22 00
June.	Railroad fare	35 70
	Hotel bills.....	22 50
July.	Railroad fare	30 40
	Hotel bills.....	24 00
	Livery.....	3 00
August.	Railroad fare	50 25
	Hotel bills.....	26 00
September.	Railroad fare.....	35 55
	Hotel bills.....	26 00
October.	Railroad fare	36 60
	Hotel bills	25 50
	Livery	9 00
November.	Railroad fare	20 85
	Hotel bills.....	15 50
Total		\$596 80

The reports of the District Inspectors accompany this and will be found in their proper places. They give in detail the condition of each mine in their respective districts, and show in strong relief the amount of work done, and good accomplished by them, during the year. Most of this has been done without recourse to the courts, and speaks well for the manner in which their duties have been carried out, and for their discretion and judgment in dealing impartially with those with whom their official relations have brought them in contact.

All of which is respectfully submitted.

THOMAS B. BANCROFT,
Chief Inspector of Mines.

REPORT OF WM. DALRYMPLE, DISTRICT INSPECTOR OF THE
FIRST DISTRICT.

I herewith present my report for the year ending November 15, 1887. During which time the mines have been inspected and looked after as carefully as time would permit. In some cases mines have been inspected from four to six times, according to the condition they were found in. Whenever a mine was found in poor condition, for the want of air to comply with the law, more frequent visits were made until everything was made all right. A few cases, and but very few, have been found of this kind, and without resorting to the courts it was always remedied. Some very valuable improvements have been made at several of the mines, and there is more interest taken, by those in charge of mines, in keeping the mines safe and properly ventilated than has been the case heretofore. The entries are continually watched, and where there is loose slate to be found, it is taken down or timbered up and made secure. The rooms, also, are being timbered better than they have been. Especially is this the case in the Jackson county region, and to some extent in every other region. Too much care cannot be taken in posting a place right, and posts ought to be kept up close to the working face whether the roof is good or bad, which if it were done I am convinced would prevent many a fatal accident. During the year I have been called upon to examine places where parties were killed, whose deaths might have been avoided if such places had been posted. In many cases a piece of scantling, if it had been put up, would have steadied the slate until such time as it could have been attended to and made secure. Nearly all the fatal accidents that have happened this year have been at the working face, where it would be expected that most pains would have been taken to make it safe. The law provides that each and every miner shall timber and keep his place secure for fifteen feet back from the face. There are various reasons that could be given for these accidents, but it is not necessary to do so, as every practical miner is quite familiar with them, and it is to be hoped that all will take more interest in the future in posting their places.

Again, the same complaint is raised in regard to more than ten men riding upon a cage at one time. I have been compelled to order the cager to stop the cage until men were taken off, so as not to permit more than ten to ride at once. In every case of this kind the mine boss has been told, and also the cager, not to allow more than the law permits to ride upon the cage, and if there are more than ten on the cage, and they refuse to come off when ordered, to have them prosecuted. In many cases men ride upon a loaded car, and also in empty ones. This has been reported to me, but I have never witnessed anything of the sort myself. At one mine, where there was a splendid stairway to travel up and down the shaft, and no safety catches on the cages, there was a cage load of day men got on to ride down; they had got about halfway down, when the engineer was ordered to bring them back, which he did, and they went down the stairway. The company, however, was notified at once not to allow any person to ride upon the cages until safety catches were put on them, and to have these orders enforced to the letter. Nearly all the shafts in the districts have stairways, either in the second opening or the main one,

and if the safety cage gets out of repair it is a very easy matter to go by the stairway until it is fixed. In every case that I have found of this sort, this has been ordered done, and it has *been done*; at least I never discovered anything to the contrary. The machinery, and ropes, and brakes, and manways at the bottom, and also the safety gates on top of every shaft, have received careful attention, and I am glad to report that there has not been any accident during the year from this source.

The ventilation of the mines is getting to be about as good as can be under the present circumstances. Our mines, as a rule, are free from gases, and where this is the case the same precaution is not needed as where there is a strong discharge of gas. There, are, however, some mines in the district that generate considerable gas, but where such is the case every means possible is taken to carry it away, and the working places kept well aired. Some places generate more gas than others, and in such instances brattice is put up along the rib in rooms and entries to carry the air forward and to carry the gas away. When gas is found, when the air is otherwise pure, it flashes in the lamp suddenly, unless the party is very careful in testing it; on the other hand, if the air is dull, from powder smoke and the combustion of lamps, etc., the reverse is the case, and there is not so much danger in making the examination. In these mines a fire boss goes through in the morning, before any of the miners go to work, and examines every working place to see whether there is gas in them or not.

Carbonic acid gas or, as the miners term it, black damp, is found in several mines in the district. At Zaleski No. 4 mine, if the mine is stopped for a few days, and the furnace not fired up, it takes a day and night to get it out sufficiently to allow the miner to work. It is produced by the metals they come in contact with. The roof is slate, and the bottom is fire clay, and it comes out of one or the other. This being the case the furnace is kept going all the time. In other mines the same can be found, more especially where there are old abandoned workings, and no air being forced through them. This same kind of damp is produced in working places, where the air is not sufficient, by the combustion of lamps and blasting of shots, and the respiration of men and animals. It has been seen so bad from this source that it was with difficulty a light could be got to burn. At this late day, when nearly every one has some knowledge of ventilation, it is not very often that the air is found to be bad from this cause. In the most of cases the system of mining is such that the air is carried forward as the working places advance, and the only thing that will cause bad air now, is for the furnace or fan to be neglected, or neglect in making breakthroughs at the proper time. In many instances cases of this kind have too often been found, but in every case orders were given to have it attended to. One mine was closed down to ten men for refusing to make breakthroughs between the rooms at the proper distance, and quite a number of entries, and also rooms, have been ordered stopped in the various mines because they were too far ahead of a breakthrough. This means of enforcing the law when such slight shortcomings were apparent was considered the best. Sometimes the air would not be very bad in these places, but from shooting, the smoke would lay in clouds, as the air could not get into the place to force it out, hence the result was foul air. Shooting so much in mines in the day-time is a very bad practice, more especially if it is an extensive mine, as the air has so far to travel and carry the smoke with it, that it is none of the purest to breathe when it is on the return. The law provides that each person shall be supplied with one hundred cubic feet of air per minute, to be carried within a certain distance of the working face, and I am satisfied this amount is sufficient when there is no shooting done, but where there are from 60 to 100 miners, and there is a continual shooting going on, or they all shoot at noon, 200 feet per man will not keep the air pure. In mines em-

ploying from 20 to 100 miners it requires from 2000 cubic feet to 6000 feet to be passing through the mine, merely to carry off the foul air that is produced by nature's law, or in other words, where the timbers, and slate and slack are undergoing changes and throwing off gaseous matter, this amount is necessary before the number of feet for persons employed therein be considered. Considering everything connected with the ventilation of mines, if there would be less shooting done during working hours it would be better for all concerned.

There are several systems of mining in this district, each one considering the system adopted by himself as the best and the cheapest by which to get coal out; the cost of mining being the main and only consideration, as the competition in the coal trade is so great that it requires economy in every conceivable manner. The single entry is practiced in districts where the coal is thin, by putting up doors in the mouths of rooms to carry the air. In places a windway is driven alongside of the entry for air. This latter plan is a very good one in thin seams, as the slate does not have to be shot down in the airway, which is quite an item in itself in the expense and also in the handling of the slate. As the law stands now, it is a very hard matter to comply with it by the single entry plan. With the entry and windway system the air can be kept up to the face all the time. The same is true of the double entry system, the air being compelled to circulate to the faces, and all can work with comfort.

By the double entry system squeezes do not affect the entry pillars as they do in the single entry. Many cases could be given wherein enough money could have been saved, (in timbering up the single entry to keep it from falling in), to have paid for such entries, and all of no avail. In thick seams, from four feet and upwards, the double entry plan has rather the advantage, but from this point down the long wall in the most of places would be the best. By this system all the coal is taken out as the workings advance from the bottom, after the pillar is left to protect the shaft, and in some cases the coal is taken out at the bottom of the shaft and it is built up with rock which is shot down to make the roadways. The places are driven just as wide as is considered convenient to work it, and the roof is shot down in all the roadways to make height for persons to travel, and at the same time to get stone to build the place with. It requires men that understand building, to secure a place worked by this system, as the weight is continually pressing down upon the buildings, and if they are not put up good and substantially they will surely succumb and let the place fall in or close.

A great many places in this district are well adapted to this system; the coal and roof lining just suitable for it. Of course there are some drawbacks, and one very important one would be in getting men that know how to work the coal, and timber and build the place, which is much more of an item than digging it,—the coal being as a rule very easy to dig. There are places in Illinois and in Virginia and Kansas, where they are mining by this plan. There is one thing certain, and that is all the coal can be mined and taken out by this system, and it is the only method by which it can be done; the other systems having from 15 to 25 per cent. of coal in the hills, which it is an utter impossibility to get out.

No boy has been found under twelve years of age in the mines, although a good many have been found but a few months over twelve, that could read and write when requested to do so. In such cases the law does not interfere. Of course the mine boss, whose duty it is to learn the age of all boys entering the mine, can do no more than ask their parents or the boy himself, as he has no way of finding out the age of any boy, unless he has been so situated to know. It would be much better if the law was more certain in discovering the age of these boys before they were allowed to go into a mine.

There has been fifteen new openings made during the year, nearly all of them

being opened with the best and latest improvements in mining. Seven of these have been opened in Jackson county, all of them but one being in the No. 2 seam of coal. The one in the seam overlying the Limestone seam is situated on Coal Run, about seven miles from Wellston, and is owned by the Southern Ohio Coal and Iron Company. It is thought that it will make good cokeing coal. It is about four feet thick, and has two bands of slate in it, one being near the bottom and very thin, and the other about six inches from the top and is also not very thick. Taking it as a whole it looks very well. The No. 2 seam of coal in Jackson county can scarcely be surpassed in quality. It is opened up very extensively around Wellston, and during the fall and winter months they are not able to mine enough to supply the demand. It is about four feet thick at the Wellston Coal Company mines, being the most western point opened as yet. Two miles to the east it gets thinner, but it is much harder, and stands handling better. The roof over this seam of coal is excellent over the entire county. The other mines are opened at or near Nelsonville, in the No. 6 seam, and at Sedalia, on the K. & O. Railway. Three of the last are in the No. 6 seam, and one in the seam above. The last is owned and operated by Wm. Palmer. It lays about seventy feet above No. 6, and is nearly five feet thick, with no slate or bands in it. It is a fine free-burning coal, and of a good quality.

Six mines have been worked out, and five others have done nothing this year, and are probably the same as worked out, as they may not start again soon.

In the district there are one hundred and twenty-five mines, nearly all of them being in operation.

In Athens county.....	33
In Gallia county.....	2
In Hocking county	17
In Jackson county..	50
In Lawrence county.....	5
In Meigs county.....	12
In Vinton county.....	6

There has been sixteen air shafts sunk, six of which constitute second openings. Some of them at a depth of 160 feet. Eight fans have been put in, and eight furnaces built. Several fans have been put in at second openings and the furnace abandoned, for the purpose of making an escapement shaft to be used in case of accident at the main opening. Some of the furnaces were put in at mines that had become extended, and the old furnaces were no longer able to supply air sufficient. These were placed at the head of the workings, to give better results.

Mine scales tested during the year are as follows:

The scale at No. 19 mine, which is owned by the Columbus and Hocking Coal and Iron Company, was tested December 15, 1886, and found correct. A track scale was afterwards put in, which was tested, October 3, 1887, and found in very fair condition.

The scale at mine 23, which is owned by the same company, was tested December 15, 1886, and also on August 25, 1887, and found in fair condition both times. They were somewhat sluggish, but if given time would weigh about right. The most of track scales, as a rule, if not kept clean and in good repair, become sluggish.

The scale at mine 25 was also tested, January 19, 1886, and on August 25, 1887, and found correct.

The scale at Gore mine No. 1 was tested and found two pounds light in 500.

The scale at Ada mine, owned by the Ada Coal Company, was tested December 31, 1886, and found one and one-half pounds light in 500 pounds.

Both scales at Emma mine were tested December 31, 1886, and found correct. This mine is owned by the Emma Coal Company.

The scale at the Standard Coal Company mine was tested December 31, 1886, and was correct.

The scale at Centre Valley mine, which is owned by Drew & Wasson, was tested December 31, 1886, and was fifty-five pounds light in 500 pounds. They were made all right in a very short time.

Happy Hollow scale, owned by the Nelsonville Coal and Coke Company, was tested January 19, 1887, and also October 3, and found correct both times.

The scale at No. 19, for Thoroughfare and Snake Hollow mines, which are owned by W. B. Brooks & Son, was tested January 21, 1887, and found in splendid condition.

The scale at Hamley Run mine was tested February 22, 1887, and also May 25, 1887, and found in very bad condition on both occasions. It is a very hard matter to describe the condition it was in. Sometimes it would be in favor of the company, and at other tests it would be in the miners' favor.

The scale at Diamond mine was tested March 24, 1887, and was in good condition. The scale at the Chapman mine was tested on the same day and found correct. The one at Springfield mine was also correct.

The scale at Worth mine was tested on the 24th of March, 1887, and was correct.

The scale at Morrow's mines was tested on the 24th of March, 1887, and found in good condition, as also was the scale at Forrest mine, tested on the same day.

The scales at Jacksonville and Republic mines, owned by W. P. Rend, were tested August 16, 1887, the Jacksonville scale being correct, and the one at Republic also, (with one ton of coal in the box), but with the weights alone it was light twenty pounds. The track scales were nearly in, and when completed the old scales would be thrown away and not used.

The mine cars at Charter Oak, operated by Wm. Malone, in Meigs county, were measured and found correct.

The scales at Glen Eben were tested August 3, 1887, and found, after they were relieved from binding, to weigh correctly.

The Wellston Coal Company scales were tested August 3, 1887, and were in good shape.

The scales at Fluhart No. 1 were tested August 3, 1887, and October 3, 1887, and found to be twelve pounds in favor of the miners the first time,—the last time just exactly right.

Comet Coal Company scales were tested August 20, 1887, and found in very good shape; as was the scales at Meadow Run when tested August 20, 1887.

Union Coal Company scales were tested October 3, 1887, and found right.

The scale at the Monday mine was tested October 3, 1887, and was correct.

The scales at New 29, owned by Wallace & Brooks, were tested November 14, 1887, with a car of coal in the box, and found correct; the same with the weights alone.

A description of the mines, the condition they were found in at each inspection, and the improvements made during the year, will be found as each one is given, in its proper place, and below will be found my traveling expenses during the year.

WM. DALRYMPLE,
District Inspector, First District.

TRAVELING EXPENSES OF WILLIAM DALRYMPLE, DISTRICT INSPECTOR OF FIRST DISTRICT, FOR THE YEAR ENDING NOVEMBER 15, 1887.

1886.			
November.	Railroad fare.....	\$	5 75
	Hotel bills.....		10 50
December.	Railroad fare.....		3 80
	Hotel bills.....		25 10
	Livery.....		8 20
	Freight on test weights		7 31
	Expressage.....		25
1887.			
January.	Railroad fare.....		4 75
	Hotel bills.....		23 10
	Livery.....		9 75
	Freight on test weights		1 73
	Expressage.....		25
February.	Railroad fare.....		4 25
	Hotel bills.....		21 40
	Livery.....		3 00
	Freight on test weights.....		1 88
	Tape line.....		2 25
	Expressage		25
March.	Railroad fare.....		7 85
	Hotel bills.....		24 25
	Livery.....		11 00
	Freight on test weights.....		1 53
April.	Railroad fare.....		11 60
	Hotel bills.....		20 00
	Livery		8 60
	Expressage		25
May.	Railroad fare.....		13 60
	Hotel bills		18 95
	Livery.....		11 00
	Freight on test weights.....		1 30
June.	Railroad fare.....		7 10
	Hotel bills.....		27 25
	Livery		11 59
	Freight on test weights.....		50
	Expressage		30
July.	Railroad fare.....		9 55
	Hotel bills.....		24 20
	Livery		6 50
	Expressage.....		25
	Repairs to anemometer.....		1 00
	Freight on test weights		30
August.	Railroad fare		8 70
	Hotel bills.....		23 90
	Livery.....		15 00
	Freight on test weights.....		3 17
September.	Railroad fare.....		14 00
	Hotel bills.....		24 90
	Livery.		10 00
	Expressage		30

October.	Railroad fare.....	\$ 3 65
	Hotel bills.....	22 55
	Livery.....	12 95
	Freight on test weights	66
November.	Railroad fare.....	5 60
	Hotel bills.....	9 50
	Livery.....	7 00
Total.....		\$513 78

DESCRIPTION AND CONDITION OF THE MINES OF THE FIRST DISTRICT.

ATHENS COUNTY.

Coe Hill,

Owned by Jumper Bros. & Lampman, and managed by A. Juniper, superintendent, and Thomas Edgell, mine boss. It has been inspected four times, and visited twice and found idle. The inspections were as follows: December 21, 1886, May 4, 1887, May 26, and August 9, 1887. On the first visit the air was found to be very good, as was the mine in general. During the month of March the water broke into the mine and drowned out the furnace, which was in the lowest place, and of course the air became stagnant. However, they were told to sink a shaft and build a furnace, which was done, since which time it has been in good condition. Only one pair of entries in operation at present, and not a great distance from outdoors, and I am satisfied the present furnace will supply air enough for three times the number of men employed. The roof is very fair in the rooms; the coal is not as thick as it is in some parts of the valley, but it is of good quality.

L. D.

Is owned by Lewis Steenrod, and managed, inside and out, by W. G. Halbert. The most of the work done in the mine now is in pillars, as nearly all of the coal has been worked out in this part. On another inspection I found them still drawing pillars, and getting them out in very good style, and at the same time keeping it safe for the men to work in. There is a very fair ventilating furnace, and whenever it is considered necessary to have more air, it is fired up. On the last inspection the force was small, and nearly all of them were working near daylight. Hence the air was good enough.

Maple Hill

Is now owned by Slater & Barnecut, and managed by Joseph Slater. The only thing that can be said with due credit to this place is, there is very good air. It has been gouged in every conceivable manner in years gone by, and the present company is merely taking out some few pillars, and the little bit of coal that was left near the crop. When done, there is a solid block at the head of the workings that will be opened out. There is also a seam of coal, overlying the main one, that is 2½

feet thick, and of a number one quality, which is taken down and shipped. But very little slate between it and the main seam. Of late the mine has changed hands, and is now owned by a company of miners, and managed by R. M. Smith, one of the company. They are doing a good business.

Johnson,

Owned by Johnson Bros & Patterson. Nearly all the work is let out to different parties. It is nearly worked out, and the most of the work done now is in pillars. The air, however, is very good everywhere about the mine. Edward Johnson has the overseeing of it.

Section 29,

Owned by W. B. Brooks & Son, and managed by Barney Donley. The condition of the mine is very good in every respect. The force is small, as they only mine to supply the engines on the railway with coal, and it does not require much air to supply them. It has been very good on every visit. The entries are driven double, and are straight and trimmed up well. The brattice between the entries is up in good taste also, being daubed well. The rooms are driven by sights, and the pillars can be found the same thickness all through.

New 29

Is owned by Wallace & Brooks, and has just recently commenced operation. It is in the same opening as Section 29, but each company has separate territory for their own miners, and the coal is taken out at separate openings. The plan of mining is by double entries, and at present ventilated by natural air, but the instruction is to put up a furnace. The entry where nearly all the men work is through the hill, and is about 700 yards in length between the openings. On each visit the air has been very good. Trappers are at the doors. The hopper is put up in good taste, as well as good and substantially. Roads are in good condition, being kept clean and tidy, and the security in every respect is first class. Frank Pendergast is superintendent, and Barney Donley, mine boss.

No. 31

Is operated by George E. Hall. It is the old Longstreth mine, which was opened many years ago. It has been visited and inspected as follows: December 18, 1886, May 21, 1887, July 14th and August 9th, and inspected on the first and last visits. On the first the air was found fair, but on the last one improvements were ordered made, so as to get all the air possible to the head of the workings. It is a very hard matter to keep this mine in number one condition, as there are so many old abandoned works, that it is impossible to stop them all up. However, the men, as a rule, are well supplied with air, the furnace being kept fired well. J. W. Taylor, mine boss.

Sedalia

Is owned by the Sedalia Coal Co., and managed by William Palmer, and it is situated at Sedalia. The seam of coal lays about 70 feet above No. 6, or (middle Kittanning). It is about 5 feet thick, and no seams of slate in it, and is a very fine looking coal, and of a number one quality, and finds ready sale. The roof is also very good and, when the mine is opened out thoroughly, it will be quite a valuable

property. There is a trestle of about 100 yards, including the hopper, the coal being hauled out by a rope, as the dip is such that it required an engine. A ventilating furnace has been built and an air shaft sunk, which makes the air very good. Mr. Palmer is a practical miner, and is thoroughly posted on mining, and knows just how to take advantage of everything pertaining to mines.

No. 10

Is owned by the Sunday Creek Coal Co., and is situated on Mud Fork, being a shaft opening 100 feet deep. The second opening is also down. It is worked on the double entry system, and aired by a 10-foot Hayden fan. The north and south entries are driven wide enough for two tracks. It is one of the best laid off mines in the district, and everything connected with the inside and outside workings is excellent. The entries are driven by sights, and kept straight and nice. The doors and brattice are put up substantially, and the roads are laid with T-iron, and are kept clean and in good shape. On last visit 41,400 feet of air was in circulation, and was very well distributed, but there is so much shooting done at noon that even this amount of air requires several hours to carry the smoke away. There is a splendid stairway in the main shaft, for men to travel in and out, which is partitioned off from the cages and is perfectly safe. There is some fire-damp found in it also, but not of much consequence, although there is a fire boss to examine it in the mornings, Archy McKillop is mining engineer, and C. E. Smith, mine boss.

Jacksonville,

Owned by W. P. Rend & Co., is a shaft opening, 135 feet deep, and generates a great deal of fire-damp, but is found on the most of inspections well aired. It has been inspected three times during the year—January 6, 1887, June 1, and September 28—and at the last visit it was in excellent condition for air, the break-throughs in the rooms being closed up and the air forced to the faces. John Matson, the fire boss, is a practical miner of more than fifty years' experience, and is thoroughly posted on gases and ventilation, and has the full control in attending to such business. The entries are double, and aired by a 10-foot fan. Roads are kept in good condition. The safety cage was not in the best condition on June 1, and was ordered fixed, and on next visit was found in good shape. The safety of the mine is as good as could be expected under the circumstances. Trappers are at the doors. Thomas N. Black is superintendent, and D. S. Williams mine boss.

Happy Hollow No. 1

Is owned by the Nelsonville Coal and Coke Co. It was inspected five times and visited twice. On the first three inspections some parts of the mine were poorly aired, and one entry was entirely too far ahead of the air. But on the last two inspections it has been found in a very satisfactory manner, which is due the present superintendent. The furnace was cleaned out and ten feet more stack put upon the air shaft, and the doors and stoppings were tightened up in good shape, from which time the air has been ample. This opening is nearly worked out, and another one is being opened out, on the double entry system, and the air shaft is already down. The coal is now hauled out by means of an endless rope, which goes in at one opening and around through the mine and out at another, to the hopper, the distance being nearly one mile. No. 2 opening is worked out all but a few pillars, and only a few men at them. Lewis Powell is superintendent, and John Wyles mine boss.

Hamley Run

Is now owned by Hamley Run Coal Co., and managed by Thomas Gibson. It has been inspected three times, as follows, January 12th, May 25th, and September 16th. On the first inspection it was managed by J. A. Finney and owned by H. C. Will & Co., and was found in a poor condition for the want of air, while the roads were in a most disgraceful condition with water and mud. Although there was a splendid ventilating furnace, such was the condition of the air. Since this time a better state of affairs is to be found. The roads are now good and dry, and the ventilation ample, as the entries are started double and the furnace kept fired. Mr. Gibson is a practical miner, and knows how to handle the inside workings of a mine so as to get out cheap coal. A fan will be put at the second opening, and the furnace abandoned, for the purpose of making an easy and available means of escape in case of accident at the main opening. Trappers are at the doors, and the safety cage is in good shape.

Broadwell

Is owned by the Federal Creek Coal Co. But few men were employed on my last visit. However, the air was very good from an air shaft that had been sunk at the head of the works. At this point the coal is about ten feet thick, with over two feet of slate in the middle of it. George W. Haybron is mine boss.

Black Diamond

Has lately changed hands, and is now owned by J. H. Bridge & Son, and managed by the same. It is being opened out on the double entry system, and the intention is to sink an air shaft and build a furnace. At the face of the entries the coal is up to its full height, and looks very good. The roof appears good at this point also.

Black Diamond,

Which is owned by Coulter, Sheets & Moore, has been idle and was not inspected.

Picketts,

Which is now owned by Pickett & Blazer, has been inspected three times during the year, and on every occasion there is always some place where the air is a little close. The force employed is small, in the most of cases, and it don't need very much air to supply them. On my last visit a furnace had been built and an air shaft sunk, which may possibly do some good, but the most of days, in the winter time at least, the natural current would do more good. However, it shows a disposition on the part of the company to have the law complied with, by making such an improvement. But it appears there is some one careless about the inside work. George Blazer is manager, and has just taken charge of it.

Excelsior.

This mine was formerly called Davis, and is now owned by Smith, Woodard & Co., R. M. Smith being outside manager. He also attends to the weighing of all the coal, dumping it and trimming. Ward Woodard is inside foreman. There are but very few men at work, and the boss does all the hauling of the coal; in fact all the improvements made inside or out is done by the firm, so that the cost of getting out the coal is very small. On the last visit an air course was in progress, which will be holed soon and will make good air.

Poston's No. 1

Is owned by C. L. Poston & Co., and managed by C. E. Millinger. It has been inspected three times during the year and, considering it is an old mine and nearly worked out, it was found in very fair condition, both for air and in other respects. There is a furnace tender, and if he fires up well there will be air enough for all, but on the other hand if it is not done there will not be any air at all. But, judging of the future by the past, everything will be done by the mine boss to keep it in fit condition for the men to work in as long as it lasts, which will not be a great while. Only one main door and an attendant to it.

Poston's No. 2

Is also the property of C. L. Poston & Co., and managed by C. E. Millinger, the coal from both openings being dumped over the same hopper. It has been inspected twice, as follows, February 23d, and July 2d, and on each occasion was found in very good condition for air. It is nearly done, and the workings have holed into Longstreth's old mine, and they have to contend with more or less foul air. But an airway is at the head of the works, which runs outdoors, and the air being fresh when it enters at this point helps it very much, as all men are at work here. The roads are in fair condition. This company is making an opening in the second hill, and the intention is to drive the entries double. The coal will be hauled through the hill by an engine.

No. 21

Is the property of the C. & H. C. & I Co., and on the first inspection was operated by Hall & Ginnetty, but has changed hands lately, and is now leased by Wilson & Peters. On both inspections plenty of air was found sweeping along the entries, as there is a number one ventilating furnace to produce it, which if fired well can supply three times more than required. On the first visit breakthroughs were needed between several rooms, which on my last visit were found made. Stephen Peters, mine boss.

No. 23

Is managed by the same parties. On the first visit the air was very good all over the mine. A great deal of the work is being done in the pillars. On my last visit the air was very good in nearly all of the places. However, breakthroughs were ordered made between several rooms in Little Skunk entry, and a door put up between 17 and 18 rooms, to force the air into the faces. There were also some breakthroughs which had to be closed up in a few rooms in Mud entry. In the main this mine is in very good condition. Roads are good and dry, and the safety of the mine is excellent.

No. 25

Is also the property of the C. & H. C. & I Co., and now operated by the Archibald Brothers, Robert Archibald being mine boss. On the first visit it was run by Wells & Waugh, the most of it being pretty well aired, although in a few places it was somewhat close, and quite a number of rooms needed breakthroughs. On the second visit it had changed hands and was operated by Hall & Ginnetty, and about the same state of affairs existed. On the third visit it was found that the present parties had leased, and they, with the general superintendent of the company,

Mr. Ferguson, were notified to have breakthroughs made between the rooms. Several visits were made, and it was found that this was not being done satisfactorily, and it was ordered reduced to ten men until the law was complied with. Since which time every thing has been made satisfactory. The present lessees are hardly responsible for these breakthroughs not being made, as they should have been, or at least quite a number of them, before they took possession. This company has a number one corps of mining engineers, and when they were operating the mines themselves they were probably the best regulated mines in the district.

New Pittsburgh

Is owned and operated by the New Pittsburgh Coal Co., and managed by Charles Johnson. It has been inspected three times during the year, as follows, February 14th, June 23d, and October 27th, and has been found in very good condition every time. The main entry has been timbered up well. A manway has been made, from outdoors, along side of the main entry for travel, as an endless rope is in the main entry, which will be extended several hundred yards farther into the entry soon. Trappers are at the doors, and the mine in the main is in good working condition. Some little fire-damp was discovered, in a drill hole in one of the entries, and the company and its officials were notified to put a fire boss on to examine the working places in the morning before the miners went into the mine.

Briar Hill,

Owned and operated by the Royal Coal & Mining Co., was inspected twice during the year, as follows, February 25th, and July 14th, and on each occasion found well aired, with the exception of an airway, on the first visit, that was some distance ahead, and was ordered stopped. They were notified, on my last visit, to make an opening at the head of the workings to answer as a second opening, and the company answered promptly and said it would be done at once. Roads are in good condition, and it is ventilated with a furnace. They employ about sixty miners. Joe Moore is manager.

Glen Eben

Is owned by the Hamilton Coal & Iron Co. It has been inspected twice, as follows, February 26th, and October 8th, and so far as the air concerned was fair. The entries are double and are only in but a short distance, and the air is fresh when it reaches the men. It has been stopped all summer, and when they started up they put in pick men in place of mining machines. The coal is thin in spots, and the roof in some places is tender. At the head of main entry, the coal and roof both look good. John Ines, mine boss.

Laurel Hill,

Owned by Metcalf & Brown. It is a drift opening and extends into the hill nearly one mile. It has been inspected twice and found in good condition at both times. A brattice was needed in front of the boilers, which should be air tight, so as to keep the gas produced by the fire from mixing with the air. The mine boss has been sick and it has not been going altogether right. But it will be attended to. Trappers are at the doors, and the air, when the furnace and pumping engines is running, just sweeps through the working places. The coal is thin, and is nearly all bottom, being the best part of the seam in this coal, while the roof is rock. Richard Densmore is mine boss.

Union

Is the property of the Union Coal Co., and on the first visit George Snyder was mine boss, and everything in the mine was entirely satisfactory, with the exceptions of several break-throughs which were needed between rooms for air. This, I was assured, would be promptly attended to; but on my last visit several were found that had not been attended to, and the present mine boss was told to have them made at once, or the rooms would be stopped. Linn entry was too far ahead of the air and was stopped. With the exceptions of these few break-throughs everything is kept in excellent shape. I. M. Stillwell is mine boss.

Carbondale

Is owned by the Carbondale Coal Co. There are three openings at this mine, and all the coal is dumped over the same hopper, and, as the coal is lower in the hill than the height of the hopper, it is hauled out by means of a common rope and engine. For a thin seam a great amount of coal is brought out. The air, as a rule, is very good in all three places, as there is a fan to produce air at each place, and they can, by running them fast, send all the air in needed, and three times the amount if necessity requires it. The entries are driven double, and the break-throughs closed up in the rooms, and doors put up in the entry to force the air into the faces. Trappers are at the doors, or at least the main ones. The roads are in fair condition, and the general security is good. Charles Smith superintendent, and Peter Hoke mine boss.

West Floodwood

Is owned by Hall & Ginnetty. It is a drift opening, and situated at Floodwood. At present it is only started, as the entries are only in about seventy-five yards. The air shaft is already sunk, and they are busy driving an air way to it, which will be holed in a day or two, when the air will be good. The entries will be driven double. Both parties are practical miners, and attend to the management of the inside and out themselves, and if there is anything in it they will surely get it out. The hopper is well put up, and a great amount of coal can be handled over it. John Ginnetty has full control.

New Floodwood,

Owned and operated by the Ohio and Western Coal and Iron Co., Thomas Middleton being mine boss. It has just started up lately, after an idleness of over one year. Coal-cutting machines have been put in, of the Legg make, which undermine it six feet deep. The coal is thin in the most of entries, although it rises in spots to six feet thick. The roof is rock, and does not have to be posted very close to face, which gives a much better chance to handle the machines. I found the air ample and well conducted through the mine. The roads were, also, in good tidy shape, considering that the mine has been standing so long, and having to haul water over them. The second opening will be reached in about twenty-five yards, and is already down.

Republic

Is owned by W. P. Rend, and is a shaft opening, situated near Sedalia. The entries are only in a short distance, and are driven double. The second opening is down, and they are busy putting up a ten-foot fan. On this visit I find the air good

enough for the few employed, although it is produced by a fire at the bottom of the air shaft. A good winding stairway is in the main opening, for ingress and egress. Thomas N. Black, superintendent; and William Perry, mine boss.

Minker Run

Is owned by Slater & Jackson, and is situated near Nelsonville. The coal is hauled by a locomotive from the second hill, through the old 29 mine of W. B. Brooks & Son, the right of way being purchased from them. The coal is of a very fine quality, and the top over the coal is good, and not very much water to handle, and it will be one of the most extensive in the district soon. The main entries are being driven double, and ventilated with a furnace, which produces quite a strong current of air. One entry was a short distance ahead of the air, but it was along the outcrop and would soon be out to an air shaft. The roads are in good condition. Joseph Slater, superintendent; and Samuel Coulter, mine boss.

King's,

Owned by J. S. Beckler and situated at King's Station, on the C. W. & B. railway, was inspected twice during the year, and found in fair order each time. The workings are close to the outside, one entry being holed through the hill and, as the force employed is but small, enough air is made by the natural current to supply all. The coal is two and one-half feet thick, and is of a good quality. The roof is also very good. The coal is pushed out, the roof not being shot down in the rooms, and but very little in the entries. J. F. Beckler, superintendent; and Lewis Barlow, mine boss.

Doan's

Is situated at Nelsonville and operated by Lama & Barber, William Barber being inside and outside manager. Since the present company has had possession of it quite an amount of improvements have been made. The main entry has been timbered in places, and several hundred yards of the old entry, which was always flooded with water, and very bad to haul coal through, was cut off by cutting through the old rooms and under a ravine, making the distance much shorter and making it easier to get the coal. Doors have been put up in the room mouths, and the furnace fired, which, if attended to carefully, will supply all with air and to spare. An air shaft is situated at the head of the workings, and a ladder in it, which can be used in case of emergency.

GALLIA COUNTY.

Cheshire,

Owned by C. A. Carl. It is a drift, and extends into the second hill. The entries are worked double, and a splendid ventilating furnace has been put up, which makes plenty of air. Since which time it has always been found in good order. The roof is a little tender, and they have to be very careful in posting. Roads are kept in good shape. James Wilson is mine boss.

HOCKING COUNTY.

Thoroughfare,

Owned and operated by W. B. Brooks & Son, has been inspected four times during the year, as follows: February 7th, April 28th, July 28th and October 10th, and, with

the exception of the Farrow air-course, which was found too far ahead of the air, on July 28th, everything was in very good condition. This entry was ordered stopped, and since then the entries have all been driven double. In the spring a shaft was sunk and a furnace built which, if fired properly, will furnish all the air needed. On the other hand, if neglected, the foul air from the old workings will settle into the working places and make it bad. This mine was never in better condition than it is now, since it was opened. There are double entries all through, trappers at the doors, and everything is kept in good tidy condition.

Snake Hollow.

The same can be said of this mine, which is owned by the same company, and managed by L. L. Scott, he being mine boss for both mines. It has been inspected three times—February 7th, May 14th and October 10th—and on my last visit the air was sweeping through the working places. It cannot be otherwise, as the entries are double, and a splendid furnace to produce the air, which, if fired properly, will produce double the amount required. Coal-cutting machines are in the mine, and a number of men mining with the pick. W. B. Brooks, Jr., superintendent for both mines.

No. 17 .

Is operated by Charelton & Blosser. It is located at Carbon Hill, and is the property of the C. & H. C. & I Co. It has been inspected twice during the year, December 14, 1886, and April 25, 1887. On the first visit the air was very good, except in a few places in 4th East, where it was a little dull. On my second visit Archibald Bros. had leased it, and perhaps the air was better, as the most of the rooms were just neatly turned away from the entry. It has been idle all summer, with the exception of a few men driving entry. Robert Archibald mine boss, on last, and Fred. Blooser on first visit.

No. 15

Was operated by James Heppel at last inspection, and found in very good condition for air, and in other respects. Better by far than during any preceding visit. It has changed hands since, but has not worked very much, and has not been inspected.

Mine 29

Is also the property of the C. & H. C. & I. Co., and leased by Boardman & Co., John Hopkins being mine boss. It was found in good tidy shape, and with the exceptions of a few rooms that needed break-throughs made, the air was sweeping through the mine in good style. Trappers are at the doors, and the roads are kept clean and in good condition. It has been idle all summer.

No. 19

Is also the property of the C. & H. C. & I. Co., James Birkbeck being mine boss, and Vint Ferguson being the general superintendent. This is one of the best mines of the state. It is well laid out, and could not be better handled than it is under the management of the present officials. Both rooms and entries are driven right, and the ventilation cannot be excelled, as there is three or four times more air in circulation than the law requires.

No. 1

Is situated at Gore, and is also the property of the C. & H. C. & I. Co., Charles Brown being mine boss. It was in good condition at every inspection. The pillars are well taken out at this place, which fact reflects no little credit on the mine boss.

Monday

Is owned and operated by the O. & W. Coal & Iron Co. It has been inspected twice, December 15, 1886, and July 15, 1887, and found in fair order both times, although there is still room for improvement. In the furnace entry there are some very long rooms. The break-throughs were closed up in several of these rooms, but not all of them, but the door was not put up, as was needed, to throw the air into them. However, the mine boss agreed to have it done promptly. There is a good furnace now, which if fired properly will give all air enough. Thomas Gosney mine boss.

Orbiston,

Owned by the same company, has not worked any during the year. George White is mining engineer for this company. He is thoroughly posted, having passed an examination at the mining school in Scotland, and received a certificate to be colliery manager.

Morris,

Is owned by the Babcock & Morris Coal Co., and leased by D. K. Nutter. It was inspected on December 17, 1886, March 2, July 16, August 2 and 8, 1887. On the first two inspections it was passable; but on the third visit they were notified to put more air into the mine by daubing up the brattices and putting more brattice up. On the following visit nothing had been done, except the stopping of the third east entry. Mr. Job, the superintendent, was notified that unless the mine was put in shape to comply with the law it would be closed down. However, on the following visit, it was found in good condition. It is a very easy matter to keep this place in good shape, as the entries are driven double, with a ten foot fan to ventilate with.

Raccoon,

Owned by the Raccoon Coal Co. It is situated a short distance from Starr post-office, on the River Division of the C. H. V. & T. Railroad. It has been inspected twice. On the first inspection the air was tip-top, as the workings were not extended such a great distance from outdoors. On the second inspection the power to produce the air was found not strong enough, and a larger ventilating furnace was suggested, which has been put up, and will produce more air than the law requires. The entries are double, and those that are not are aired, while driving, by brattice along the sides of the entry. Roads are in fair shape. Trappers are at the doors, and the security is excellent, as is also the drainage. The coal runs from $4\frac{1}{2}$ to 5 feet thick, and is of a good quality, being nearly all the bottom strata of No. 6 seam, which is the best of the coal, and the roof is very good over it. Richard Weitzell, mining engineer and superintendent, and Amos Groves, inside foreman.

Summit,

Owned by the Star Gas Coal Co., and managed by James Kerr, does not on last visit come under the mining law. On last visit there were five men at work; and they were near the outside or crop.

Consolidated

Owned by the Consolidated Coal & Mining C., and situated on Brush Fork, has been inspected twice during the year and found in very good condition on both visits. The entries are driven double and ventilated with a fan, and trappers are at the doors, and the air sweeps through the mine. Four times more air than needed can be forced into the mine, if desired, by running the fan. The coal is nearly seven feet thick, and has a good top over it. The roads are in good condition in every respect. The doors and brattice are put up good and as near airtight as can be made. George Brashears superintendent, and William Diltz mine boss.

Brushfork Nos. 2 and 3

Are owned by the Babcock & Morris Coal Co., and are situated on Brush Fork, the one being on one side of the valley and the other on the other side, with the hoppers extending from one hill to the other. The coal is hauled out of both openings by means of endless ropes. Coal-cutting machines are in both mines, but recently all of them have been taken out of No. 2 except one, which is used for mining the entries. In the rest of the mine pick men are working. Both places are laid off well, on the double entry plan, and are ventilated with large furnaces. No. 3 is managed by Benjamin Hill, and I found it in much better condition for air. The doors are put up well, as also the brattice, and the air is carried through the rooms by putting brattice in the air ways and doors in the entry. It is also in neat, tidy shape, and there is probably not a better conducted mine in every particular in the state. No. 2 is just in about the same condition, if the doors that were put up in the entries to force the air into the rooms were kept shut, and the break-throughs in the rooms were made at the proper time, but I find it neglected to some extent. On last inspection strict orders were given to have it attended to, which was agreed to. There is a great amount of coal shipped from this place. James Heppel is mine boss for No. 2, and William Job is general superintendent for the company.

Summers,

Owned by the Summers' Coal Co., and managed by Zeth Williams. On every visit it has been found in good condition in every respect, with the exception of last visit, when the main entry was found entirely too far ahead of the air, and was ordered stopped until properly aired. Some other little improvements were also ordered, such as closing up break-throughs in rooms, and putting up doors in the entry, to force the air into the faces. In the main it is in very fair shape. One trapper attending one main door. Roads are in good shape. Drainage is good, and the security the same.

Sackett's

Is situated on Sand Run. It is an old opening and has been re-opened lately, for the purpose of getting at a block of coal that was thought to be in a certain part. After testing it, this coal was not found; and the pillars were attacked, which will be worked out soon.

Black Diamond,

Owned by the Haydenville Mining and Manufacturing Co., has been inspected twice and visited three times, and found idle. It was found in very fair condition in every respect, except at my last visit, when the Wallace entry was found too far ahead of air and was ordered stopped. The air is very well distributed into the rooms, and,

as a general thing, there are not many who suffer for the want of it, although on my last visit there were several break-throughs that needed closing up, in the rooms in the Walters entry, to force the air to the face. The mine boss is an old experienced miner, and knows just how it ought to be done, and, considering the faults he has to contend with, in cutting out part of the coal, he is doing very well. Daniel Walters, mine boss.

JACKSON COUNTY.

Comet,

Owned by the Comet Coal Co., has been inspected during the year, as follows: April 1st and August 26th, and found in good condition each time. The air is ample and is well carried to the faces. The roads are in excellent good shape, being of T-iron and well laid down, and when it is necessary to take off a hill or fill up a swamp it is done, and the road made so that one mule can do as much work as three could if it was not attended to. There is no mud or water allowed to stand on the roads in this mine. The rope broke with a loaded car upon the cage, but did not go two inches when it stopped. Drainage is also very good, and the security is excellent. Peter Gallagher is superintendent and mine boss.

Tropic

Is situated at Jackson, and owned by the Tropic Iron Co., the superintendent being Henry Price, and George Goddard mine boss. On my first visit it was found in very fair condition. Since then Arthur Roberts has been mine boss, and it was also found in good condition under his management. It is a very hard place to handle, on account of so much water having to be contended with. It is the No. 1 seam, and is considered the lowest in the state, and lays in basins, sometimes running up into hills of fifteen feet in height, at one-third pitch, and plunging down on the other side just the same as it raised, which makes it very hard to keep in order. The coal in the bottom of the basin is thickest, and when it extends up on to the hill it thins out somewhat. The pumps are continually going, night and day. Hand pumps of all kinds are used inside to keep the working places dry and fit to work in.

Star,

Owned by the Star Furnace Co. is also located at Jackson, and managed by Henry Price. It is always found in good condition.

Globe

Is owned by the Globe Iron & Coal Co., and situated at Jackson. It has been inspected twice, April 26th, and September 7th, and was in good condition both times. The break-throughs in the rooms are well closed up, and the air carried to the faces. The water is well handled also, and the rooms kept in very comfortable working condition. The security is also good, although it would not be a very bad job to have a man hole made in the slope. Trappers are at the doors, and the mine in the main could not be any better taken care of than it now is. John R. Rowland is mine boss.

Indiana

Is situated on the Ada Switch, and owned by Drew & Wasson. It was not run much during the year. It was inspected once, and found in fair order. D. J. Harry, mine boss.

Center Valley

Is also owned by Drew & Wasson. It has been inspected three times, as follows: January 28th, April 1st and October 4th. It has been found in very good condition every time, although on the first visit several break-throughs in rooms needed closing up. On the following visits, however, this was done, and the air kept up to the faces in very good style. The engine for running the fan is not good, as it can be run only at a certain speed. However, the supply of air is always found to be as required by law. The roads are in fair order, as is also the security. Trappers are at some doors. John Jenkins, mine boss.

Forest

Is owned by Jones & Williams, and is situated on the Springfield Switch, and managed by B. R. Williams, and has always been found in very good condition for air, under his supervision. The break-throughs are well closed up in the rooms, and the air kept close to the faces. Another opening is being made, to the west of the present one, for the purpose of cutting off the workings and making the haul shorter. The coal is thin, but of a very good quality; and the roof is good.

Ada

Is owned by the Hall Coal Co. On the first visit there was a great deal of water to contend with, caused by the heavy rains, that made the rooms near the crop to fall in. However, the air was very good, with the exception of one place, which was stopped. D. E. Stroud was mine boss on this inspection. On my last visit Morris Cameron was mine boss. The most of the places working are near the crop, and a hole will be made soon that will improve the air very much. It will soon be worked out. S. W. Lake is superintendent.

Eureka

Is owned by J. A. Long & Co., and located at Jackson. It is a shaft opening, and has been inspected three times during the year, as follows: January 29th, June 8th and October 6th. A fan has been put in at the main opening, so as to make the air shaft a means of escape if ever needed. Several good improvements have been made lately, and if the water was handled a little better than it is, this would be quite a valuable property. The coal is good for the smelting of iron, and is about four feet thick, and the roof as a rule is very good. The safety is good. A good safety cage is in, of the Crane Bros. patent. Ladders are in at either opening. J. A. Long, superintendent; John H. Byers, mine boss.

Gosline & Barbour

Is situated near Coalton, on the O. S. railroad, and managed by J. H. Powell. Considering the extent of the workings, it could not be kept in better condition. The plan of mining is by entry and windway, and taking the thin seam of coal into consideration, it is the best. The air is carried forward in good shape, and there are

trappers at the doors, while the roads are kept in good condition. Drainage is very good, as is also the general security.

Benton's Slope,

Owned by V. B. Benton & Co., and is situated on Ada Switch, the mine boss being Saul Brown. The workings extend in quite a long distance, which makes it a very difficult matter to carry the air. But as the mouths of old rooms are daubed up good, and the break-throughs in the rooms are closed up well, plenty of air is carried to the faces, sufficient to take the smoke away in very short notice. The intention is, however, to sink an air shaft in the spring, at the head of the workings, in order to make the distance shorter for the air to travel, which will improve it very much. Roads are in good condition. The drainage also, as is also the security. V. B. Benton, superintendent.

Diamond,

Owned by Chapman & Roderick, is located at Chapman's, on the O. S. railroad. It has been inspected several times this year, and, so far as the ventilation is concerned, it might have been better than it was. However, it has been worked out and abandoned. Thomas Roderick, superintendent; T. T. Hughes, mine boss.

Eliza,

Now owned by the Eliza Iron Co., was formerly owned by the Eliza Furnace and Coal Co. It was inspected February 19th and September 24th. At the first time the stack was not on top of shaft, and the air was not the best. But since then a ten-foot fan has been put in and a ladder, making plenty of air and also making it safe for the miners to escape in case of fire at the main opening. The entries are driven double, and the air is very well distributed over the working places. Break-throughs in rooms are closed up, and trappers, as a rule, are at the doors. Everything is kept in very good shape about the mine. Cris Martindale, superintendent; Thomas McGuire, mine boss.

Wellston No. 2

Is owned by the Wellston Coal Co., and is located at Wellston. It has been inspected several times this year, and found all right every time. The entries are driven double, and the air, produced by a fan, is well conducted over the entire mine. The break-throughs in the rooms are well closed up, which carries the air to the faces. It is a very extensive mine, and requires a great deal of attention in order to keep it in working condition. The general security is tip top, and, although there is a great amount of water to contend with, the working places are kept in a manner free of it and in a very comfortable condition to work in. T. J. Morgan, superintendent; James Donohue, boss.

Wellston No. 1

Is the property of the same company. Nearly all the coal mined here is used at the furnace in smelting iron, and the force employed is not near as strong as at the other mine. It is, however, kept well aired, and in good order in every respect. The main shaft has been retimbered, and was done in a very good manner. The mine boss is an experienced miner, and knows just exactly how to handle anything pertaining to mines. It is also managed by the same officials as the others are.

Wellston No. 3

Is also the property of the Wellston Coal Co. It is, also, a shaft opening, about eighty feet deep. The machinery and the entire structure is well put up. It is expected to get a great amount of coal when in proper running order. The second opening has been started. Safety cages are in. The intention is to ventilate with a fan. The coal is over four feet thick at this point. The same officials attend to it.

Franklin,

Owned by the Franklin Coal Co., and situated on the O. S. railroad. It has been inspected three times this year, as follows: December 28th, May 20th and October 4th, and on each occasion it was found in very good shape, and the air very well conducted over the mine, as the break-throughs are closed up in most of the rooms, and, on last visit, trappers were at all the doors on the north side. One was needed in the south and was put there. There is a great deal of shooting done at noon, and it does not make much difference how much air is put into the workings, it will require several hours to carry away the smoke. The fan is kept running at a high speed and forces a great amount of air into the mine. In the spring this place was burned down. Since then it has been rebuilt. New safety cages were put in, and the entire structure is better put up and more convenient than before. James Currington, mine boss.

Hall's No. 1,

Owned by John F. Hall, and located at Coalton, was inspected several times during the year, and found in very fair order on each occasion. The force employed is small, and it can be handled very easily. However, the few that are at work are kept comfortable. James Gascoyne, mine boss.

Hall's No. 2

Is the property of John F. Hall, and is also situated at Coalton. On last inspection the air was very fair. They were ordered to close up the break-throughs in the rooms, which would throw the air to the faces, and carry away the smoke easier and better. One room was stopped until a break-through was made for air. The number employed here is also small. The changes occur so often with mine bosses that it is not considered necessary to give all their names. Charles Hall was mine boss on last visit.

Hall's No. 3,

Owned by the same party, is situated near Coalton. It is a drift opening and does not extend far into the hill. They ventilate with a furnace and, as the force is small, it is not necessary to keep on big fires, as plenty of air is produced without. On last inspection it was found in first class shape for air, as also in other respects. Daniel Womeldorf, mine boss.

Meadow Run

Is owned by the Willard Coal Co. It was visited February 16th, and August 5th, and found in very fair condition at both visits. On my first visit Wesley Evans was mine boss. He was told to put in a ladder in the second opening, which was done. It is a winding ladder at about half-pitch. It might never be used, as there is a

safety cage, and also a winding stairway in the main shaft, but if ever it is needed it is there ready for use, and the law requires it. A ten-foot fan produces the air, and in the main, although the entries are driven single, the air is kept up good. One trapper was needed on last visit, and a few break-throughs closed up in the rooms. William J. Davis, mine boss.

Hurd Shaft,

Owned by the Hurd Coal Co., is situated on Ada Switch, and managed by John James. Ever since he took charge it has been found in good tidy shape. The air is kept sweeping through the entire mine. Roads are in good shape, and the safety cage is in good working order. The brake on the drum is also a good one, and can be used at any moment if desired.

Slope

Is also owned by the same company and managed by the same party, and was found in good working condition. Good air, good roads, good drainage, and good security.

McKittericks'

Is owned by McKittericks Bros., and is situated on Ada Switch. It has been inspected twice during the year and found in fair order on both occasions, although it was in better condition for air at the first visit than at the last one. The break-throughs in the rooms were well closed up and a door in the entry to force the air into the faces. The force employed during the summer months is but small, and it does not require much air. The roads and the drainage, as also the security, are very good. James Harper, mine boss.

Standard

Is owned by the Standard Coal Co., and is situated at Glen Roy. During the year the furnace has been abandoned and a ten-foot fan put in, for the purpose of making an easy means of escape at the second opening, which the law requires. A ladder is in also. The fan produces plenty of air, and it is very well conducted over the mine. On my last visit one room was ordered stopped until a break-through was made for air. The mouths of the old rooms are neatly daubed with clay, and the roads are in good tidy condition. There is a splendid field of coal at this point. It is four feet and over in some places, and a splendid roof. In other mines around it the coal will hardly average three feet. D. C. Jones, superintendent; D. L. Jones, mine boss.

Northern

Is a shaft opening, thirty five feet deep, and is owned by the Northern Coal Co. It has just been sunk and the entries are but a short distance from the bottom. The force is small at present. Safety cages are in, and the second opening is already down, with a ten-foot fan in. It is well fitted up to handle coal. D. C. Jones, superintendent; D. L. Jones, mine boss.

Morgan No. 3

Is owned by Jones & Morgan. It was visited and found in very good condition, both for air and in other respects. A fan has been put in (which is ten feet in diameter) and the furnace abandoned. It will give better results than the furnace,

as it is better located to do so ; besides it will be kept running steady, and the current of air will be more regular. D. C. Jones, superintendent ; D. L. Jones, mine boss.

Emma

Is owned by the Emma Coal Co. It has been inspected three times, as follows, January 26th, April 27th, and August 27th. On the first inspection James Pascoe was mine boss, and quite a number of places were in a bad state for want of air. Several entries were ordered stopped, as they were too far ahead of air. The break-throughs in the rooms were not closed up and the mine in general was not in good condition. However, on the second inspection, some little improvement was noticeable, and on last inspection it was found to cope with any in the district. The break-throughs were closed up in the room, and the air carried forward in grand style. Trappers are at the doors, and the mine is in first class working condition. Richard Poole, mine boss, Moses Jones, superintendent.

Chapman

Is owned by the Chapman Coal Co., and managed by John Hays. It has been inspected twice, and on each occasion found in very good condition. A furnace has been put up, which is capable of producing 30,000 feet of air. It is one of the best, if not the best, in the county. When it is well fired up it is a hard matter to keep a light in some parts of the mine. The roads are in good tidy shape, and the mine in general is in good working condition to get out plenty of coal.

Springfield

Is owned by the Springfield Coal Co., and managed by John Hays. It was also found in good condition for air. Everything is kept in good tidy shape. The entries are kept clean and neat, and the mouths of the old rooms are daubed up good, to prevent the leakage of air.

Grace

Is a shaft opening, 100 feet deep, situated on the Ada Switch, and owned by H. L. Chapman. The second opening is down, but communication has not yet been made. Safety cages are in, and the intention is to put in a stairway in the second opening, and ventilate with a fan. The hopper and machinery are put up in good taste. The mine boss in charge is an expert on mining matters, and capable of making a valuable property out of it. The mine is safe under his management. Edmund Gregory, mine boss.

Newport,

Owned by James Newport, was visited and found not to come under the mining law. However, the air is very good where the few men are going to start work. It is crop coal, and they don't have to use any powder. Edward Newport, mine boss.

Fluhart's No. 2

Is a shaft opening, 160 feet deep, and is owned by Theo. Fluhart & Co. It is situated a short distance from Wellston. On last visit the second opening was just about reached. When reached a fan will be put in. The boiler building was too close to the engine house, and they have been notified to have it made to comply

with the law. Safety cage is in. John McMillan, mine boss; Theo. Fluhart, superintendent.

Fluhart No. 1

Is owned by the same company, and is also a shaft opening. It has been in operation quite a number of years, and has become quite extensive—the workings being in a long distance, and it is very hard to handle the air. However, by closing up the break-throughs in the rooms, it is kept in very good shape, and the air is carried to the heads of the east entries and past the faces. Doors are put up in the entries to keep the air traveling through the rooms. If the same pains and care had been taken years ago, when the workings were not quite so extensive as they are now, it would not require the same amount of labor or expense to keep the air up. It is being gutted out in grand style, by taking out the pillars and all, in a breast, and letting it fall in. I believe the first fall that has occurred in the district from taking out room pillars took place here recently. That is the right way to mine coal. Take it all out. It was put under the ground for that purpose, and it ought to be taken out. If it was all taken out as they advanced, it would take much longer to go over the same territory. James Palmer, mine boss; Theo. Fluhart, superintendent.

Jones,

Owned by the Jones Coal Co., and managed by Joseph Harper. It is in good condition. The hills that are met with in the entries are shot off and made lower, so as to get cheap coal out.

Milton,

Owned and operated by the Milton Coal and Iron Co., Vinton Pierce being mine boss. It is always found in good condition. The air being plenty, and well distributed over the mine. Good roads all over. They are making a way into Fluhart's No. 1, to be used as a means of escape in addition to the present one.

Eagle,

Owned by Eagle Coal Co., is located on the Springfield Switch. It has been inspected three times, as follows; February 17th, August 4th and October 8th. On the first visit it was in very fair order for air, as the force was small, and a number of places were holed into the Cameron mine, which made the air good. On the last two visits it was in fair condition for air, and the present boss has done a great amount of daubing, and is getting it in fair condition. It will soon be made all right. Frank McLaughlin, mine boss.

Mine No. 3,

Owned by the Southern Ohio Coal and Iron Co., is situated at Corse. It is a slope opening, 100 yards deep, at a pitch of one foot in three. It has been found in good condition at every inspection. The break-throughs are closed up in the rooms, and the air is sweeping around. It is absolutely necessary to have it so to carry away the smoke that is made at noon. Nearly every one in the mine shoots from one to three pounds of powder, and there are over 100 men employed. Trappers are at the doors. Allen Stiff, mine boss.

No. 1,

Owned by the Southern Ohio Coal and Iron Co., and situated at Coalton. It has been found in good, tidy shape during the year,. Trappers are at the doors, and airways are driven after the entries for air. The air is ample and is well conducted into nearly all the places. A few break-throughs needed closing up in the rooms, which would be attended to. Roads in fair order. Drainage and security very good. Mike Lamberson, mine boss ; James Redding, superintendent.

Garfield,

Owned by the same company, was inspected, and might have been in better shape for air, although there were none suffering very much. Improvements were ordered. John Whiting, mine boss.

No. 7

Is also owned by the Southern Ohio Coal and Iron Co., and is situated on Coal Run. It is a new opening, and is only in a short ways. The hopper is about completed, and coal shipments will commence at once. It is considered a cokeing coal. Their cannel mine does not come under the mining law and was not inspected. Alex. Oman, mine boss ; Reece Thomas, superintendent.

Hipple,

Owned by the Hipple Coal Co., is located at Coalton. It has been inspected twice during the year, and found, in the main, in very good condition. The air is plenty and is well conducted over the mine. In quite a number of rooms the break-throughs were closed up, and the air carried to the faces. Trappers are at the doors, and the roads are kept in good shape. There is not much water to be contended with, and nearly all of the rooms are dry. An opening has been ordered made to answer the purpose of a second one. William Rowe, manager, inside and out.

Worth

Is owned by Kessinger & Co. It is situated on the Springfield Switch, and managed, inside and out, by Newton Kessinger. The force employed most of the time is but small, and does not require very much air, and it is well that such is the case. However, it was fair, but could have been much better at the head of the entry. A shaft has been put down at the head of the first right, which will make it good. This will be the main part of the workings soon.

Ada

Is owned by the Ada Coal Co., and is situated at Glen Roy ; Moses Jones being superintendent, and Thomas Phillips mine boss. It is in good condition. The air is plenty, and just sweeps through the workings. Good stairway in the second opening, and safety cage at main shaft. Trappers at doors. Roads good, and the safety could not be better.

Price's,

Owned by Price Bros., does not come under the law, and was not inspected on my last visit.

Kyle

Is situated at Jackson, and owned by Kyle & Co. The air was found to be very good in the few rooms that were working. A hole has been made into the Globe mine to answer the purpose of a second opening. John Kyle, superintendent, and Thomas Davis, mine boss.

Cameron,

Owned by Cameron & Rhoades, and located on the Springfield Switch, was inspected twice, as follows, March 31st, September 8th. On the first inspection the force did not come under the law, and the air was fair. On the last inspection an opening had been made outdoors which made the air good in that part, but in the other entry it was none of the best. The entry was ordered stopped until made better. They were instructed to put fire in the furnace. Ellison Rhodes, manager, for inside and out. It is owned now by Patterson & Murphy, of Dayton, Ohio.

Eclipse

Is owned by Jerry Morrow ; mine boss, Charles Holmes. It is in good condition in every respect. The air sweeps through the mine in good style. Good roads, good drainage and good security. Another opening is being made, on the other side of the valley, and a short incline up to it. The coal comes on to the same hopper,

Kessinger

Is a drift opening, situated on the C. H. & D. Railroad, about two miles from Coalton, and is owned by Kessinger & Co.; Marion Kessinger, superintendent, and William Chatfield, mine boss. There are two openings, one on either side of ravine. They have been recently opened and are only in but a short way. Air shafts are already down, and it is the intention to keep everything in good shape, after it is opened out properly.

LAWRENCE COUNTY.

Stock

Is an ore mine, owned by the Etna Iron Works and operated by the same company. It is the only one that comes under the mining law now in southern Ohio, or in the first inspection district. It is conducted on a very good plan, being by entry and windway. Both have to be timbered solid, and it is done in good workmanlike manner. A furnace has been built which does fairly. However, orders were given on last visit to put twenty feet more stack upon it, which has been done, with brick. The air is well carried forward to the faces. The seam is from nine inches to twelve inches thick, and the roof is shot down to make sufficient room to work in. Hence a great amount of slate has to be hauled outdoors and dumped, as there is not room inside for it. Years ago this seam was worked by long-wall, the only proper system to work it by. The plea was set up that it cost too much in timbering and it was abandoned. With a manager that understands how to work long-wall, and has the miners that know how to do the work, but few timbers are needed. On the contrary if the men don't understand it, all the excavation can be filled full of timbers and then they will be afraid to work it. By this system the narrow work would be dispensed with, and all, or nearly all, of the slate could be put back in the gob. Henry Stephenson, mine boss ; George Cox, superintendent.

Lawrence,

Owned by the Lawrence Iron & Steel Co., and managed, inside and out, by Henry Pirrang. It has been inspected twice during the year, April 12th, and September 21st. On the first visit it was found in very good condition for air, with the exception of a few places where they were drawing pillars. An airway is being cleaned out, which will make it much better. The far end of the workings will be done soon, and all men put in a new entry, which is being opened in the front of the hill. It will be put in good shape soon. On last visit, however, it was not quite satisfactory.

Belfont,

Owned by the Belfont Iron Works, and managed, inside and out, by Thomas Harris. It is worked in very good condition. The air is ample and is well taken in to the faces of the rooms. The roads are in good tidy shape.

Kelly,

Owned by the Kelly Nail & Iron Co., and located at Ironton; Thomas Miller, mine boss. The air is good. Good T-iron tracks in entries and rooms, the coal being pushed from the rooms into the entry. The roof is rock, and there is as much coal taken out here to the acre as at any other mine with the same thickness of coal in the country. On last visit I found one entry entirely too far ahead of the air, but it would be holed in a few shots. The coal is used at the nail mill.

Creighton

Is an ore mine, and owned by Willard & Creighton; B. F. Justice, mine boss; James Creighton, superintendent. It did not come under the law on my last visit.

New Castle

Is owned by Means, Kyle & Co., and is situated two and one-half miles from Hanging Rock. The air was very good in the most places. A great deal of work done is in pillars, and it is very much scattered. A new entry is started that is going into a solid block of coal, and the intention is to drive an airway with the entry, and put up a ventilating furnace. Roads are in good condition, and the mine is safe and nice. John Dinkle is manager.

MEIGS COUNTY.

Nail Mill,

Owned by the Standard Nail & Iron Co., and managed by Thomas Headley. They employ twelve men, and the coal mined is used at the mill. It is dumped over the hopper at the mine, and hauled to the mill, a distance nearly half a mile, on a small track laid with T-iron.

Zahl

Is located at Minersville, and owned by the Zahl Salt Furnace, the coal being used at the furnace only. On my first visit Arthur Roberts was mine boss, and the air was good and fair, as there had been a hole made into Coal Ridge, and it had but a

short distance to come, and was pure when it reached the working places. On my last visit Fred Barttell was looking after it, and it was also in fair shape. The force is small, and it does not require very much air to supply them.

Antiquity

Is owned by the Ohio Coal Co.; Robert Stobart, manager, inside and out. On last inspection there were only a few men in the mine, and the air was ample for them. A good stairway has been put in the second opening.

Charter Oak

Is owned by the Charter Oak Coal Co., and is situated on the Ohio River, one mile above Pomeroy. The air has been found fair on each inspection. A few rooms need break-throughs in the straight entry, and one door put up at Baillir's room, and the break-throughs closed up on either side of the entry in the rooms. This will throw the air forward into the faces of the rooms. The main entry is very safe considering the number of years it has stood. Timbers were ordered to be put at two places, which I was assured would be done. Owen Curtis, an experienced miner, has charge.

Syracuse

Is owned by the Syracuse Coal & Salt Co., and is situated at Syracuse; John Blair, superintendent, and Thomas Mainwayring, mine boss. It is kept in very good condition considering the extent of the workings. The entries are timbered when it is needed, and kept assafe as possible. The air is ample and is very well conducted over the mine. The roads are in very good order. The safety cage was found in poor condition on my last visit and they were notified to make the men go by the slope, or climb the ladder, until it was fixed.

Minersville

Is operated by D. S. Lewis, and is located at Minersville; Jacob Williams, mine boss. The air is very fair in the most of places, but can be improved some by closing up break-throughs in rooms, in the first pair of east entries. Some timbering needed doing near the mouth of the bank, and they have been told to do it. There has not been very much work done here for several years.

Coal Ridge,

Owned by the Coal Ridge Salt Co., and managed by D. W. Daniels. It has been inspected twice and found in fair shape for air on both occasions. On last visit they were ordered to put in a furnace. The force is but small and the coal is used at the salt furnace. Nearly all the men are at work now in the second hill; a few, however, are drawing pillars in the first.

Peacock,

Situated at Pomeroy and owned by the Pomeroy Coal Co.; Martin Ebersback being mine boss. A good job of timbering has been done in the main entry. On last visit the air was not the best, and changes were ordered made in the ventilation, which would cut off three-quarters of a mile that the air would have to travel, and would greatly improve the volume. Doors were ordered to be put up at certain

points to throw air into the rooms. This place was always found to be well aired, but of late the airways must have fallen in and hurt it. Trappers are at a number of doors. There are old and new mines; the coal coming out into the same parting. Each place is ventilated by separate furnaces.

Excelsior,

Operated by Martin Ebersbach; William Ebersbach, mine boss. It was in fair condition on last inspection. The air on first visit was none of the best, and was ordered improved.

Dabney

Is operated by the Dabney Mining Co. It is a drift opening, and is located on the Ohio River near Pomeroy. The main entry has been well timbered in the most of the places, and it is done in a workmanlike manner. The air was good, and the mine in the main was in very good working condition. J. J. Price, manager.

Buckeye,

Which was owned by the Buckeye Salt Furnace, has been worked out and abandoned. William Joseph was mine boss.

Williams

Is situated on the Ohio River, above Minersville, and operated by John E. Williams D. E. Evans, mine boss. It is a very extensive mine, and is a very hard one to handle, owing to the workings all going to the dip and making so much water to contend with. However, the air was good in the most of places. The rooms are well timbered, and the general security is fair. Break-throughs in several rooms were ordered to be closed up, and doors put in the entry to force the air into the faces of the long rooms. I was assured by the mine boss that it would be promptly attended to. He is a miner and knows that it is absolutely necessary to have good air to work in, and no doubt will take an interest in making it pleasant for the miner.

VINTON COUNTY.

Hawk's,

Owned by O. F. Hawk, and situated on the river division of C., H. V. & T. railroad. The air was none of the best on my last inspection, although there is a furnace which could produce air enough for the few employed. It looks as if no coal had been in it yet. There is no need of sinking a shaft and putting up a furnace unless fires are put in it and kept going. The law is only complied with when there is plenty of fresh pure air for the miner to work in. T-iron has been put down in the entry and the cars changed to suit, which makes an improvement in the getting out of the coal, and by which the cost is much lessened. This is the limestone seam of coal, and is nearly four feet thick at this point. O. F. Hawk, superintendent; Jacob McKinney, mine boss.

Lower Raccoon,

Owned by John L. Lawler. It is situated at Minerton, on the river division of the C., H. V. & T. railroad. A new opening has been made, and it is being opened out in

good style; the main entry being double, and the intention is to make all of them double. The air is produced by a temporary furnace at present. This will do very well until a shaft is reached (which is about sixty feet deep), when a furnace will be put up. The coal looks well and is four feet thick, and the limestone comes down to the coal head at this point, making a splendid roof. Good strong pillars are needed in entries, and also rooms in this seam. T-iron track has been put down from the hopper in through the workings. A good hopper has been put up. The engines on the railroad coal here, which gives employment to many miners. J. L. Lawler, superintendent; Mike Lawler, mine boss.

Zaleski No 6

Is owned by the Zaleski Company, and is located near the town; T. L. Watkins, mine boss, and Robert Thomson, superintendent. It has been found in good enough shape on every visit this year. A windway is driven along with the entry, to carry the air, and no one suffers from this source. The coal in the most of cases is taken in a breast after the rooms are neatly turned off the entry, and the roof appears to stand up good. It is well posted, and the places are filled up to the roof with slate and slack, and in some instances cribs are put in. In the main the coal is taken out in fair shape, and it is considered better than having pillars. The mine boss is an experienced and practical man, and has had quite a number of years in the management here, and knows the nature of the roof pretty well, and considers it the best way.

Zaleski No. 4

Is the property of the same company, and managed by the same officials. As a rule, it has been found in very good order always. It is the No. 4 seam, and has the appearance of being a good coal. A great deal of black damp is thrown off by the metals, and the furnace has to be kept going at all times.

Ingham's,

Owned and operated by Patrick McDermott; John McDermott, mine boss. They employed seventeen miners on my last visit, and the air, as a rule, is very good. One place in the first entry was somewhat close, but the entry will go outdoors in thirty yards, which will make it all right. The coal is about two and one-half feet thick. The roof is not shot down in the east and west entries, nor in the rooms, and it makes it very hard to get through it. It would be money saved to rip the roof, in the entries at least.

Downard

Is owned by Wm. Comstock, and is situated at Radcliff, on the river division of the C., H. V. & T. railroad. It has just been newly opened and is in but a short distance, with but a few men at work. The coal is the limestone seam.

Elko

Is a shaft located at Vinton Station, on the C., W. & B. railroad, and is owned and operated by the Madeira Coal Co.; J. S. Willet, superintendent, and John Hall, mine boss. It has been inspected three times, as follows: December 9, 1886, February 4th, and in July. On the first two visits the second opening had not been reached. On February 4th forty-seven miners were found in the mines. Orders

were given to take them out and comply with the law. This was done. The air is very good in nearly all the places, but in a few it could be very much improved. As soon as the fan is moved to the second opening the volume of air will be greater. Safety catches are on the cage, and they are putting a stairway in the air shaft. The coal runs from two and a half feet to three, and is a fine coal. It makes good coarse coal, and stands handling well, while the roof is very good. It is thought by some to be the No. 2 seam, or the same as at Wellston. It resembles it very much.

WASHINGTON COUNTY.

Sycamore

Is owned by Harden & Keever, and is located at Coal Run, on the Muskingum River. It is a slope, and has been in operation a number of years. On last visit there was nothing doing. A. Hardin, general manager.

REPORT OF J. L. MORRIS, DISTRICT INSPECTOR, SECOND DISTRICT.

During the year the mines in the Second District have been visited and inspected as often as possible. Some of them had to be visited oftener than others. The reason of this is, when a mine is found with the air current not sufficient to supply the number of men employed in the mine, a certain amount of time is given to improve the condition of the mine. Consequently we have to go again to that mine and make inspection, to satisfy ourselves that the improvement is made; which will be noticed in the perusal of each mine report.

I would here beg leave to draw the attention of those parties who are working the single entry system to Section 301 of the mining law, which provides for the hanging of doors, used in conducting the air current, so that they will shut of their own accord.

I have found many instances where the doors have been hung contrary to the mining law; but we don't say it is ignorance on the part of the boss, but I believe it is because it is easier to hang the door another way. But every boss ought to remember that it is his duty to obey the mining law, even if it takes a little more of his time. Every practical miner knows that a door that does not open against the air current is not a very reliable agent as a means of conducting ventilation. Another bad feature is often met with—that is, some men, when going through a door, are not particular to close it after them. But if the doors were hung properly, leaving the door half open would not occur. And I believe if a penalty were fixed for leaving a door, or canvas, open on the entry, or room, that some people would be more careful to close the doors and canvases after then; and by that keep the current in its regular course. I am glad to state, that most of the Second District operators who used to work their mines on the single entry system, are beginning to see the propriety of changing it to the double entry system, and, by actual figures, finding it as cheap, and far more comfortable, to all concerned. Every practical operator is ready to realize that good ventilation, good drainage, sufficient timbering, and all other safeguards thrown around the existence of the miner, are to his interest, as well as to the comfort and safety of his workmen. For it has been demonstrated beyond a doubt that the most economical method of operating coal mines is that which guarantees the fullest measure of health and safety to the operatives.

During the past year there have been forty-five new mines opened in this district, and eight old mines abandoned, or worked out.

Improvements have been made in the district as follows, viz., twenty-eight air shafts sunk, one second opening made, twenty-six furnaces built. In addition to these, four cable plants have been put in, to take the place of mules in hauling from the mines. Eighteen mine scales have been tested, as follows:

February 16th—C. & H. C. & I. Co, No. 3 and 5, tested and found correct.

March 20th—Brock Hill, tested and found correct.

March 29th—Robinson's, at Bellaire, tested and found a little light.

April 23d—Morgan Run scales, found correct.

April 28th—Conesville scales, found correct.

April 29th—Franklin scales, found correct.

June 20th—Conesville scales, found correct.
 July 19th—Fitz Allen scales, found correct.
 July 19th—Orange scales, found correct.
 August 16th—Goshen scales, found correct.
 August 31st—Monarch scales, found correct.
 September 20th—Prospect scales, found correct.
 September 21st—Orange scales, found correct.
 October 7th—Conesville scales, found correct.
 October 8th—Rock Run scales found correct.
 November 22d—Wallace scales, found correct.
 November 22d—Block vein scales, found correct.
 Below will be found my traveling expenses during the year.

J. L. MORRIS,

District Inspector, Second District.

TRAVELING EXPENSES OF JOSEPH L. MORRIS, DISTRICT INSPECTOR OF THE
SECOND DISTRICT, FOR THE YEAR ENDING NOVEMBER 15, 1887.

1886.	
November.	Railroad fare.....\$ 3 75
	Hotel bills..... 20 50
	Livery 5 00
December.	Railroad fare..... 9 90
	Hotel bills..... 38 00
	Livery..... 8 50
1887.	
January.	Hotel bills..... 33 50
	Livery..... 12 00
	Freight on test weights 45
February.	Railroad fare..... 9 00
	Hotel bills..... 37 50
	Livery..... 5 50
	Freight on test weights..... 88
	Telegraphing 50
March.	Railroad fare..... 3 50
	Hotel bills..... 47 50
	Livery..... 3 00
	Freight on test weights..... 1 18
	Telegraphing 27
April.	Railroad fare..... 4 15
	Hotel bills..... 22 50
	Livery 10 50
	Freight on test weights 1 05
May.	Railroad fare..... 14 40
	Hotel bills 37 00
	Livery..... 2 00
June.	Railroad fare..... 14 60
	Hotel bills..... 36 00
	Livery 8 00

July.	Railroad fare.....	\$20 80
	Hotel bills.....	33 50
	Livery	7 00
	Freight on test weights	70
August.	Railroad fare	13 60
	Hotel bills.....	47 00
	Livery.....	5 50
	Freight on test weights.....	1 00
September.	Railroad fare.....	15 60
	Hotel bills.....	47 00
	Livery.	5 50
	Freight on test weights.....	1 00
October.	Railroad fare.....	16 75
	Hotel bills.....	40 00
	Livery.....	7 00
November.	Railroad fare.....	9 70
	Hotel bills.....	21 00
	Livery	3 00
	Expressage	1 00
Total.....		\$687 28

DESCRIPTION AND CONDITION OF THE MINES IN THE SECOND DISTRICT.

BELMONT COUNTY.

Etna.

This mine was closed up early in the fall of 1886, on account of natural gas being used instead of coal for fuel at their rolling mill at Etnaville, but the gas was not sufficient to keep the mill going and the company had to open out the mine again and get coal to keep the mill going. I visited the mine and inspected it February 11, 1887, and found it in excellent condition. During the summer the mine has been closed again, the company procuring ample gas to run the mill. Roger Ashton is mine boss.

November 28th, this mine has started up again.

Standard,

Owned and operated by the Standard Iron Co. This mine was visited and inspected February 11th, and found in good condition. Since then it has shut down, the company procuring ample amount of gas to run the mills. W. T. Graham, superintendent; John Conaway, mine boss.

Wheeling Creek,

Owned and operated by the Pittsburgh and Wheeling Coal Co., located on the C., L. & W. R'y. This mine was visited twice—May 18th and August 23d—and each time found in excellent condition. The current of air at inlet is maintained all through

the working faces. Great care is taken here to watch the brattice work at all breakthroughs, hence the current is maintained through the mine. Probably it would be interesting to know that there are eighteen nationalities represented in and around this mine—Americans, Welshmen, Englishmen, Irishmen, Scotchmen, Frenchmen, Germans, Bohemians, Austrians, Swedes, Hungarians, Swiss, Italians, Belgians, Tyrolese, Polanders, Bavarians, Prussians. I suppose there is not such a mixture in any other mine in the state. J. E. Waters, superintendent; Wm. Hanson, mine boss.

Pittsburgh,

Owned and operated by the Pittsburgh and Wheeling Coal Co., located on the C., L. & W. R'y, at Maynard. I visited this mine three times during the year—May 17th, August 29th, and September 5th. This mine has been greatly improved the last two months by a new furnace and other improvements. J. E. Waters, of Bridgeport, superintendent; Isaac Jones, mine boss.

Maple Hill,

Owned and operated by John H. Dunham, and located on the C., L. & W. R'y. This mine was visited three times this year—May 8th, July 12th, September 6th. At my first visit orders were given to improve the condition of the mine. On my second visit the orders were complied with, and the mine at present is in splendid condition. John H. Dunham, superintendent and mine boss.

Kidd's No. 1,

Owned and operated by Kidd Bros. & Co. Located on the C., L. & W. R'y. This mine was visited once, June 16th, and found in excellent condition. Wm. Kidd, superintendent; J. W. Hicks, mine boss.

Wheeling Valley,

Operated by J. B. Ramage; located on the C., L. & W. R'y, near Maynard. This mine was visited June 17th, and found in good condition. J. B. Ramage, superintendent; W. H. Borin, mine boss.

Flushing,

Operated by Faxon & Son, of Elyria; located at Flushing, on the C., L. & W. R'y. This mine was visited three times—April 1st, June 17th, August 30th—and each time found in excellent condition. W. G. Williams, superintendent and mine boss.

Rock Hill,

Located at Flushing, on the C., L. & W. R'y; operated by J. H. McLain & Co. John Bowen, superintendent and mine boss. This mine was visited three times—April 1st, June 17th, August 30th. Last visit found the mine in excellent condition.

Franklin,

Owned and operated by Stewart & Meehan; located on the B. & O. R'y, at Franklin Station. This mine was visited three times—February 9th, March 30th, September 7th—and found in good condition each time. In this mine we find an old

English miner seventy-seven years of age, who mines coal every day. His name is Robert Spence. John Stewart, superintendent; W. P. Williams, mine boss.

Kidd's No. 2.

This mine is on the B. & O. R'y, at St. Clairsville Junction, and is operated by Kidd Brothers. This company has had some trouble with adjoining landowners to get a second opening for the mine, and failed. Hence the mine has been abandoned. The mine was visited February 9th. Robert Kidd, superintendent and mine boss.

Kidd's New Mine,

Located about half-way between Franklin Station and Quincy, on the line of the B. & O. R'y. Preparations are made for a large output. Robert Kidd, superintendent and mine boss.

Robinson,

Owned and operated by G. O. Robinson. Located two miles west of Bellaire, on the B. & O. R'y. This mine was visited three times, February 7th, March 29th, April 8th. This mine has been idle a part of last summer, caused by a strike. G. O. Robinson, superintendent; Mathew Johnson, mine boss. The mine is in good order, as far as ventilation is concerned, but the roadways are in bad condition.

Sheck's.

This mine was visited four times—February 7th, February 16th, March 29th, October 17th. On February 16th, was called to this mine on account of an accident, by which a miner, name Wm. Daukins, lost his life, by a fall of slate. He had put off a blast in the coal and went to see what execution it had done. He had a pick in hand trying the roof and while in the act of doing this, the slate fell and killed him. His partner was standing back on the road and saw it all. This mine has been idle 4 months during the summer, on account of a strike. R. Heslop, superintendent; Wm. Heslop, mine boss.

Morgan's,

Owned by Morgan & Gorrell. This mine is in the city limits of Bellaire, and has been idle all the year, until a few weeks ago, when it was leased by Williams & Sullivan, who are building pockets to supply the B. & O. engines. John Sullivan, superintendent and mine boss.

Sullivan.

This mine is located within the city limits of Bellaire, and operated by Sullivan & Hinds. This mine was visited three times—February 8th, April 7th, September 9th. When last visited pillars were being taken out previous to abandonment. John Sullivan, superintendent; Wm. Morlin, mine boss.

Bernard.

This mine is also in the city limits of Bellaire, and was visited twice—February 8th, April 7th, and each time found in excellent condition. The output of this mine has materially decreased this summer, natural gas taking the place of coal at the

Bellaire Mammoth steel plant, where the product of the mine was used. T. L. Jones, superintendent and mine boss.

Belmont No. 2,

Operated by the Belmont Coal Co. Located on the Ohio River, below Bellaire. This mine has done but very little during the summer, owing to the low stage of water in the Ohio. This mine was visited three times—February 10th, April 6th, June 15th—and each time found in good condition. W. S. Heatherington, superintendent; Jos. Jeffers, mine boss.

Belmont No. 1.

This mine has been reduced to six miners, on account of gas taking the place of coal in the glass house that took all their output. The mine was visited once, September 9th. A. Kelly, operator.

Captina.

This is a shaft mine, located on the line of the B. Z. & C. Railroad, near Armstrong's mills. Owned and operated by the Captina Coal Co. This mine was visited once and found in excellent condition. Samuel Fielding is superintendent and mine boss.

Union,

Situated on the Ohio River, opposite Moundsville, W. Va. It is a slope mine, 480 feet deep, but had to be closed up since December, 1886, when an injunction was gotten out on the company, for refusing to put down the second opening, for escape in case of danger.

Pittsburgh.

This is one of the river mines, operated by L. Rockershausen. This mine has done but very little this year, on account of low water in the Ohio River. This mine was visited three times—February 10th, April 6th, June 14th—and each time found in excellent condition. John Hinds is mining boss.

Wegee.

This is also a river mine, and is owned and operated by Peter Shaver. I visited this mine twice—April 5th, June 14th—and found it each time in good condition. Peter Shaver, superintendent and mine boss.

Boggs,

Located on the St. Clairsville & Northern Railway, owned and operated by Wm. Boggs, and working the No. 8 seam. They are intending here to have a large output in the near future. I visited this mine twice—September 6th, October 17th. This is a new mine and the necessary appliances for ventilating were not completed, but the mine was in fair condition.

CARROLL COUNTY.

Orange

Is situated on the W. & L. E. R'y, at Sherrods-ville. There has been some changes in the management of this mine since my last report, which caused some trouble in the working and ventilating of the mine. But I am proud to say under the present management things have been greatly improved. You can see that we had to watch them pretty close to accomplish the object. We visited this mine eight times—December 30th, March 8th, April 21st, July 18th, August 6th, September 20th, November 4th. At present the mine is in good condition. The mine at present is under superintendency of Ralph Wainwright; Frank McIntosh, mine boss.

Hazleton,

Operated by the N. Y. & O. C. Co. Located on the C. & C. R'y, at Sherrods-ville, has been idle all the year and is still the same.

Fitz Allen,

Located on the C. & C. R'y, two miles north of Sherrods-ville. This mine has been greatly troubled by faults cutting out the coal and causing extra expense in mining. I visited this mine four times—December 28th, April 21st, July 19th, November 2d. The last visit found the mine in good condition. Samuel Allen, superintendent; John Waubough, mine boss.

Star.

This is a new mine, located one mile north of Sherrods-ville, on the line of C. & C. R'y, and operated by Franklin Coal Co. I visited this mine twice—April 21st, November 3d, and each time found it in excellent condition. Z. Doll, superintendent; I. Baysinger, mine boss.

Russell Hill Shaft,

Operated by A. S. Vanwickle. This mine has been idle all the year.

Allen.

This mine was operated by S. Allen. I visited this mine once, March 9th. The mine is at present abandoned. All the coal worked out.

Hazleton No. 1.

This is a new mine, located one mile south of Sherrods-ville, and operated by Fuller, Davis & Co. This mine is opened on the same vein as New Hazleton, and the coal is of superior quality. This mine was visited five times—December 31st, March 7th, April 22d, July 20th, November 1st, and found it each time in good condition. W. A. Davis, superintendent; John McPhiael, mine boss.

Hazleton No. 2.

This is a new mine opened on the double entry system, and all around the mine fit-

ted up with all the latest improvements for shipping facilities. This mine is located on the W. & L. E. R'y, one mile and a quarter south of Sherrods-ville; owned and operated by Fuller, Davis & Co. I visited this mine five times—December 31st, March 7th, April 22d, July 20th, November 1st, and found the mine in excellent condition each time. W. A. Davis, superintendent; James Clelland, mine boss.

Hazleton No. 3.

This, also, is a new mine opened on the same seam, one mile distant from No. 2 mine, and also owned by Fuller, Davis & Co. There is no coal shipped away yet from this mine, but will be in a few days. There is an endless rope put in the mine to haul the coal out, instead of mules. W. A. Davis, superintendent; Daniel Jones, mine boss.

COSHOCTON COUNTY.

Conesville No. 1,

Owned and operated by David Davis. This mine is located on the Pan Handle R'y, seven miles west of Coshocton. I visited this mine four times—January 22d, April 28th, June 21st, October 7th. Great improvements have been made in this mine, and it is now in excellent condition. David Davis, superintendent; R. Holdsworth, mine boss.

Conesville No. 2.

This mine is on the adjoining territory, and operated by David Davis. It was visited five times—January 22d, March 1st, April 28th, June 21st, October 7th—and the last few times we visited it the mine was in good shape. David Davis, superintendent; W. Wheeler, mine boss.

Rock Run,

Located on the Pan Handle R'y, three miles south of Coshocton; operated by the Royal Coal Co. J. S. Taft, superintendent; John Harris, mine boss. I visited this mine three times—January 22d, August 15th, October 8th. The two last visits found the mine in good order.

Franklin No. 1,

Located on the Pan Handle R'y, five miles southwest of Coshocton; operated by the Columbus Coal Co. F. N. Barnes, superintendent; Thos. Williams, mine boss. We visited this three times—January 22d, April 29th, September 1st. This mine is kept in fair condition.

Franklin No. 2

Belongs to the same company, and is managed by the same officers. This mine was also visited three times—January 22d, April 29th, October 1st.

Chestnut Hill,

Operated by J. H. Robson. This is a mine newly come under our jurisdiction, and was visited October 5th and found in fair condition. J. H. Robson, superintendent and mine boss.

Conley.

This is another mine newly come under the mining law, located one mile east of Coshocton, and ships its product to Cleveland over the C. & C. R'y. It is operated by John Conley. We made a visit here November 12th, and found the mine in excellent condition. John Conley, superintendent; F. Hall, mine boss.

Flint Hill,

Another mine newly come under the law, located one and one-half miles from Coshocton, and supplies a portion of the town with fuel, and ships to Cleveland over the C. & C. R'y. This mine was visited November 12th, and found wanting in ventilation. Orders were given to better the condition of the mine at once. J. L. Davis is superintendent and operator; Eli Davis, mine boss.

Hay.

This mine has just come to have miners enough in it to call for the Inspector to visit it. It is located one mile east from Coshocton, and employs twenty-four miners. The product of the mine is used in Coshocton and also in Cleveland, and is shipped over the C. & C. R'y. W. G. Hay is owner and operator. A new opening is now being made on the other side of the hill, and a switch is to be built to the mine off the main line of the C. & C. R'y, so that in the near future this mine will rank with the leading mines of this county. Wm. G. Hay, superintendent; Charles West, mine boss.

Hinkley.

This is a new mine, located on the Kilbuck branch of the C. A. & C., near Warsaw. This mine has been opened on what is known as the Warsaw cannel coal. This seam of cannel is four and one-half feet in thickness, and of a very superior quality. There is ten inches of bone coal overlying the cannel. The miner mines out that bone coal, and then wedges up the cannel coal in large blocks. This mine is owned and operated by the English Cannel Coal Co., of England, and all the product of the mine is shipped to London, England. J. M. Frack, superintendent, and W. G. Jones, mine boss. We visited this mine November 23d, and found it in excellent condition.

Cassingham.

This is a new mine, located on the C. & C. R'y, and also connected with the P., C. & St. L. R'y, two and one-half miles south of Coshocton. Owned and operated by Mr. John Cassingham, one of the old Coshocton operators of fifteen years ago. This mine, no doubt, will be one of the leading plants of the county, as it is connected with two railroads, one leading north to the lakes and the other west. There is a substantial opening here, and all appurtenances of the latest improvements to facilitate the shipment of the output of the mine. John Cassingham, superintendent, and James Fitz, mine boss.

Morgan Run.

This mine is located on Morgan Run, three and one-half miles east of Coshocton. Owned and operated by the Morgan Run Coal and Mining Co. This company has two and one-half miles of railroad of their own, connecting their mines with

the C. & C. R'y at the mouth of Morgan Run. The manager, F. C. Goff, constructed a rather curious furnace at this mine last summer. The arch is twelve feet wide, ten feet high to the spring of the arch, and four feet long; grate bars three feet long. It gives splendid results. I visited this mine three times—April 23d, June 4th, August 15th. Since the new furnace is built the mine is in good condition. F. C. Goff, manager; Wm. Morris, mine boss.

GUERNSEY COUNTY.

Hartford.

This is a shaft opening, operated by the Baltimore Coal Co., on the line of the C, W. & N. Y. R'y, and makes connections with the B. & O. R'y at Morgan Junction. Alex Robbins is superintendent, and J. C. Hill mining boss. I made one visit to this mine, and found it in excellent condition.

Buffalo Shaft,

Operated by J. E. Spaid, who is superintendent; Alonzo Spaid, mining boss. They are taking pillars out here, previous to abandonment. I visited this mine once, May 13th, and found plenty of ventilation.

Trail Run.

This is a shaft mine, owned and operated by the W. & L. E. Coal Co. This mine is ventilated by a ten-foot Brazil fan, and when put to its extreme capacity propels 81,000 cubic feet of air through the mine. The reason of that is the way Mr. George Atherton, superintendent, had it put up. It would be a good idea for those parties using fans to see it. I visited this mine twice, December 6th and May 11th, and each time found the mine in excellent condition. George Atherton, superintendent; Thomas Snowden, mine boss. Mine located on the line of C. & M. railway.

Farmer's.

This mine is located on the line of C. & M. R'y, at Byesville. This is a shaft mine. There has been a shaft sunk at the interior of the mine for an inlet, so that the current of air will be pure coming to the men. This mine has been visited twice, December 7th and May 12th, and each time found it in good order. W. A. Smith, superintendent and mine boss.

Nicholson,

Operated by the Ohio Coal Co. S. Granger, superintendent; Alex Wiper, mine boss. They have nearly completed here a plant to use a tail rope to haul their coal instead of mules. This cable will displace fourteen mules, and they expect to double the output of the mine. I visited this mine three times—February 15th, September 29th, November 29th—and each time found it in fair condition. We expect, in a few weeks more, it will be in excellent condition, when present improvements under way will be completed.

Matthews No. 1.

This mine is situated on the C. & M. R'y, two miles south of Cambridge, and operated by the Union Coal Co. I visited this mine six times—February 15th, May

24th, June 2d and 3d, September 30th, November 29th. On May 22d, in No. 3 right butt entry, it was found that gas was generating, in small quantities, but still getting stronger. I was called there and, by close examination, we found it was a small fissure in the floor of the mine that furnished the gas. We ordered a break-through made at once inside of this place and, as soon as that was done, no more gas was found. This mine is in excellent condition. O. P. Matthews, superintendent; John Cappas, mine boss.

Matthews No. 2.

This mine is on the same territory as the above mine, but does not run as regular as No. 1. When the trade is slack No. 1 mine gets the preference. I visited this mine once, September 30th, and found it in good condition. O. P. Matthews, superintendent; John Cappas, mine boss.

Jumbo,

Operated by Wm. Turner, and supplies Cambridge with coal for domestic use. The coal is of excellent quality, and finds ready sale. I visited this mine once, September 30th, and found it in splendid condition. Wm. Turner, superintendent and mine boss.

Guernsey.

This mine is located on the line of the B. & O. R'y, near Cambridge. Owned and operated by the Guernsey Coal Co. M. D. Robbins, superintendent; David Collins, mine boss. This mine, the same as the three mines on this road, has been on strike nearly all summer, consequently we only made one visit here, September 28th, but we found the mine in excellent condition.

Cambridge,

Owned and operated, at present, by the same company as the Guernsey mine, they being the purchasers. This mine was left to run down previous to the sale, and left in a poor condition, but since the present company has got the mine it has been improved greatly. M. D. Robbins, superintendent; David Collins, mine boss. Mine visited September 28th.

Scott's,

Owned and operated by Scott Coal and Salt Co. W. A. Scott, superintendent; John Wilson, mine boss. This mine was visited September 27th and found in excellent condition.

Norris.

This is a slope opening. It was necessary to have a second opening for escape, and this has been accomplished, to the credit of the company. We had only to tell them once and they obeyed. This mine is in excellent condition. We visited here September 27th. Turner G. Brown, superintendent; S. P. Anderson, mine boss.

HOLMES COUNTY.

Bowen Mine.

As this is the only mine in the county that is subject to the mining law, and has always been kept in good condition, we only visited the mine once this year, November 9th, and found it in excellent condition. It is operated by the Bowen Brothers. E. D. Bowen, superintendent and mine boss.

JEFFERSON COUNTY.

Bustard Shaft,

Owned and operated by the Jefferson Coal Co. Located two miles up the Ohio River from Steubenville. This mine was visited once, August 11th, and found in first-class condition. John Bustard, superintendent; John Keily, mine boss.

High Shaft,

Operated by the Steubenville Coal and Mining Co., and superintended by one of Ohio's oldest superintendents, Wm. Smurthwaite. Michael Watson, mine boss. This mine has been idle for some time through the summer, caused by a strike. We visited this mine August 12th, and found it in excellent condition.

Rolling Mill No. 1,

Operated by the Jefferson Iron Co. I have visited this shaft five times—March 15th, and 16th, August 9th, and 10th, October 18th. On my visit in March, the mine had been idle for some time. During that period their traveling way to Boreland shaft, which was kept up for escape, closed. But, by a great deal of perseverance and danger the traveling way was again opened. The distance between the two shafts, as shown by the pedometer, is two miles and five-tenths. I went through it all and found it nearly $3\frac{1}{2}$ feet high on an average. The old workings had to depend on the pumps at Boreland's shaft to keep the gas from accumulating in them. So when those pumps stopped, the air current stopped, and there was danger of the gas accumulating in those old workings. So we talked the matter up with the officers, and they agreed to put up a fan, of ample capacity, at the Boreland shaft, so as not to depend on the pumps, which in my opinion will make it safe. August 9th Superintendent Ritson and two miners, who were chosen by the miners to accompany me through the old workings, could not find, at that time, a lamp full of gas anywhere. But at the same time an accident may happen, and if we went the following day gas might be there. But credit is due the superintendent for the care he takes in preserving the lives of those in his employ. On my last visit the men were out on a strike. Thomas Ritson is superintendent of the mine.

Brilliant Shaft,

Operated by the Spaulding Iron Co. This company was notified to put down a second opening or reduce their force to ten men, so, rather than put down the second opening, they reduced their men to ten at any one time. We visited this mine twice—March 18th, August 13th—and found the mine in excellent condition. John Nicholson, superintendent and mine boss.

Kelley,

Located near Portland, on the C. & P. R'y; operated by the Kelly Coal & Coke Co. We visited this mine twice—March 17th, August 8th—and each time found it in excellent condition. Robert Nicholson, superintendent and mine boss.

Strip Vein,

Located at Irondale; operated by Wallace Banfield & Co. This company has natural gas for fuel at present at their rolling mill, so that the output of this mine has been greatly decreased lately. We visited here October 19th, and found everything in good order. Wm. Banfield, superintendent; Howell Williams, mine boss.

Walnut Hill,

Operated by O. & P. Coal Co.; was visited five times—March 17th, March 31st, May 6th, August 8th, August 13th. We had to shut down this mine one week to better the condition of the mine, which left the mine in fair condition. A. Black, superintendent and mine boss.

Bergholtz.

This mine is located on the L. E. A. & S. R'y; operated by the Yellow Creek Coal Co. H. H. Gallinger, superintendent; S. Scheckler, mine boss. This mine was visited October 21st, and found it in splendid condition.

The following small mines are working less than ten men in each, but are kept in good condition: Lacy's Coal mine and Clay mine, Empire Coal mine and Clay mine, Porter & Minor Clay mine, Great Western Coal mine and Clay mine, Forest City Coal mines and Clay mines, Jefferson Coal mine and Clay mine. All these mines are situated along the Ohio River, between Steubenville and the mouth of Yellow Creek, and the product is used in the different factories along the river, between the above points.

MUSKINGUM COUNTY.

Peacock,

Located on C. & M. V. R'y, five miles north of Zanesville; operated by the Union Coal Co. This mine has been idle all summer. We made a visit there August 4th, and it was then idle. Hence no inspection.

Harper's Three Feet.

Number of miners been reduced here below ten.

Harper's Mill Run.

This mine was visited twice—December 20th, July 8th. When there is anything wrong in those dog mines, and the inspector gives orders for improvements, the first thing you find that there are only ten men working, consequently your power is gone and you must leave; you have nothing to say. Abe Harper, manager.

Wheeler.

I visited this mine twice—December 21st, August 4th—and each time found it in fair condition. B. Wheeler is owner and operator.

Fisher.

This mine was visited twice—December 22d, August 4th. This mine is the best ventilated of all the dog mines of Muskingum. G. A. Fisher, mine boss.

Oak Grove.

This mine has only been worked one month this year. Some disagreement between the lessee and the lessor.

Salt Run,

Located on the B. Z. & C. R'y, five miles from Zanesville; operated by C. W. McCutcheon. The mine was visited twice, July 8th, November 18th, and found each time in excellent condition. J. M. Lilly, mine boss.

Buffalo.

This is a new mine, located on the B. Z. & C. R'y, five miles from Zanesville. It is owned and operated by J. E. Spaid. The mine is opened on double entry system and in splendid condition. J. E. Spaid, superintendent; A. B. Mullen, mine boss. Visited November 18th.

Lehigh.

This is a new mine, located on the C. & M. V. R'y, one mile east of Roseville; operated by David Davis; mine boss, Absolom Button. This mine is well arranged and in good condition. We made two visits here—January 4th, and July 6th, and each time found it in good condition.

Union Nos. 1, 2, 3 and 4.

These mines are opened two miles west of Roseville, by the Union Coal Co. They are well managed and all coming to the same tipple. They are also kept in good condition. They were visited twice—June 23d, and October 23d. Lewis Mathews, superintendent; J. C. Hilliard, mine boss.

Chicago.

This is a new mine, located at Cannelville, on the line of the C. & E. R'y; operated by the Chicago and Columbus Coal Co. This mine has four feet of bituminous coal in one part of the mine, and ten feet of cannel coal in the other part. I visited this mine three times, and found it in good condition each time. Charles Kern, superintendent; James Wiper, mine boss.

Chicago No. 2.

This is also a new mine, owned by the same company and managed by the same officers as No. 1. They have not commenced shipping from this mine yet.

These mines were visited three times each of them.

Irish No. 1.

This is a new mine, operated by the Brush Creek Coal Co., located on the C. & E. R'y at Cannelville. This mine has two feet of bituminous coal, and twelve feet of cannel coal. This mine was visited twice,—January 7th, when just opened, and August 1st. The last time found the mine in good order. S. L. Hoover, superintendent; W. M. Davis, mine boss.

Irish No 2.

This is also a new mine, owned by the same company and managed by the same officers. They work the bituminous coal altogether in this mine, and it averages four feet. This mine was visited twice, August 1st and October 25th, and each time found in excellent condition.

Qualey.

This is a new mine, operated by the Cannelville Coal and Iron Co., and located on the C. & E. R'y, near Cannelville. This mine produces cannel coal altogether, and is about ten feet thick. I visited this mine three times—August 2d, October 26th, November 17th—and found it in good condition each time. J. Qualey, superintendent; E. Watkins, mine boss.

Brush Creek.

This is a new mine, operated by the Columbus and Brush Creek Coal Co., and located on the C. & E. R'y, near Cannelville. This mine produces bituminous coal altogether. We visited this mine twice, August 1st and October 25th, and each time found it in good condition. G. W. Davis, superintendent and mine boss.

Manly Nos. 1 and 2.

These are new mines, operated by Manly & Co. These, also, are located on the C. & E. R'y, near Cannelville. Here they work bituminous and cannel coal. They were visited twice—October 27th, November 17th—and my last visit found both in excellent condition. C. Manly, superintendent; H. Lepart, mine boss.

Muskingum Valley.

This is a new mine, operated by W. H. Sealover, located on the C. & C. R'y. It is opened on the small seam. We visited this mine twice—March 26th and November 16th—and found it in as fair a condition as can be expected for a dog mine. Charles Huey, superintendent.

Coal Hollow Nos. 1 and 2.

These are two new mines, operated by W. H. Sealover, located on the line of the Z. & O. R'y, eight miles south of Zanesville, working No. 7 seam six feet thick. I visited this mine once, November 16th. Charles Huey, superintendent and mine boss.

Neff.

This is a new mine, operated by Neff, Sowder & Siler, located on the Z. & O. R'y. It is opened on the small seam, and coal hauled out by dogs. Here is where

you can get as much money for a good dog as a mule. This mine is in fair condition. S. A. Neff, superintendent and mine boss.

Garrett.

This is a new dog mine, on the Z. & O. R'y, opened on the small seam. Orders were left here to have air shaft at once. J. Garrett, operator, superintendent and mine boss.

Ballou.

This mine has been filled with water for several years, but was cleaned out a few months ago. Owned and operated by O. Ballou. Located on the Z. & O., near Taylorsville. O. Ballou, superintendent; J. Miner, mine boss.

PERRY COUNTY.

Beach Grove.

These mines are located on the C. & M. V. R'y, at McLuney, and operated by I. H. Jones. The product of both mines comes to the same tipple. These mines have been idle several months this year, so that we only visited them twice, and each time found them in good condition. Wm. Lucas, superintendent and mine boss.

Crescent.

This mine is located on the C. & M. V. R'y, and operated by the Rosedale Coal Co. This mine was visited three times. Orders were given here to build a furnace, which was done, and the mine is now in good condition. H. Guy, superintendent; Thomas Davis, mine boss.

Horn,

Located on the C. & M. V. R'y, near Reed Station. This mine is not kept near as good as it ought to be kept. It was visited twice, and each time found wanting in ventilation. Orders were given last time for a furnace. Peter Tague, superintendent; Abe Moony, mine boss.

Block Mine.

This mine is located on the C. & M. V. R'y, near McLuney, and is operated by M. & P. Tague. It was visited three times, and each time found in good condition. P. Tague, superintendent; Alonzo Tague, mine boss.

Lyonsdale.

This place has had a great deal of trouble lately, with a squeeze in their entry, which caused them to open a new entry. This place was visited twice, and last time were getting in shape for shipping coal. The mine is located on the C. & M. V. R'y, and operated by Meenan & McNulty.

Nugent.

This place is located on the C. & M. V. R'y. There has nothing been done at this place all summer. I visited here August 26th. There, at that time, they were

trying for No. 5 seam. This place is operated by Wales, Collet & Hammond. W. J. Nugent, superintendent.

Block Vein Colliery.

This mine is on the line of the C. & E. R'y, at Redfield; operated by Davis & Sons. It was visited four times—January 12th, April 13th, October 14th, November 22d—and each time found the mine in good condition. J. H. Davis, superintendent and mine boss.

Buckeye Creek Nos. 1, 2 and 3,

Located on the C. & E. R'y, at Redfield; owned by the Buckeye Creek Coal Co. Very little has been done here this year, but I was told by one of the officers that the whole plant would soon be revived. A. Converse, superintendent.

Coyle.

This is a new mine, on the C. & E. R'y, at Redfield; operated by Coyle & Co.; opened on No. 5 seam, and on the double entry system. I visited this mine three times—January 12th, April 12th, October 14th, and found the workings in fine condition. James Coyle, superintendent and mine boss.

Simons.

This is a new mine, located on the C. & E. R'y, at Redfield; operated by A. P. Simons; opened on No. 5 seam. I visited this mine three times, and found it in good condition each time, as far as ventilation was concerned, but the roads were in bad condition in some parts of the mine. A. P. Simons, superintendent and mine boss.

O. K.

This mine is located on the Straitsville Division of the B. & O. R'y; operated by Clark & Davis, but since, I have been told, that there is a Co-operative Company formed to work this mine. I visited the place September 17th. At that time the mine was drowned out, and they started to drive an entry on No. 5 seam, which is 25 feet below No. 6, the seam they worked, to drain the upper seam. J. Davis is superintendent.

Daugherty.

This mine is located on the B. & O. R'y, Straitsville Division; operated by P. V. Daugherty. I visited this place once, September 16th, and found everything in good condition. P. V. Daugherty, superintendent; Henry Robins, mine boss.

Forquer.

This mine is located on the Straitsville Division of the B. & O. R'y; operated by Forquer, Moore & Co. This mine was visited September 16th, and found in very air condition. E. Forquer, superintendent; James Little, mine boss.

Dickson.

This is a new mine, opened this last summer by J. C. Hamilton, Shawnee. It located on the Straitsville Division of the B. & O. R'y, at Dicksonton. Every-

thing has been done here with the greatest care and of the latest improvements to handle a large output. The incline plane is several hundred feet long, from the mine to the tipple, and instead of the old-fashioned drum, they have a cast iron sheave about three inches wide, and a flange on each side to keep the rope in. The rope goes one and one-half times around the sheave, which is about three feet in diameter, and everything works like a charm. The mine is opened on the double entry system and in fine condition. J. M. Foreman, superintendent. I visited this mine when they had just commenced to ship coal, September 14.

Brilliant.

This mine is located at McCuneville, on the Straitsville Division of the B. & O.; operated by Crawford and Gave. This mine was visited September 14th, and found in good condition. H. Gave, superintendent; W. J. Crawford, mine boss.

Furnace, or Manly.

This mine is located at Shawnee, and operated by Gosline & Barbour, of Toledo. I visited this mine twice, March 2d, June 7th, and each time found it in good condition. J. M. Mitchel, superintendent and mine boss.

No. 2.

This is a new mine, opened by Gosline & Barbour, on the same territory. Here they have a fine opening, and the product of the mine is to be taken out by a tail rope instead of by mules. The plant was being erected on my last visit. This mine will be operated by Gosline & Barbour, and superintended by J. M. Mitchel.

Shawnee Valley,

Located at Shawnee; owned and operated by the Shawnee Valley Coal & Iron Co., This mine was visited three times—February 1st, June 9th, August 23d, and found the workings in excellent condition each time. There was a miner killed at this mine, August 18th, by a fall of slate. Thomas Phillips, superintendent; Lewis Jones, mine boss.

Upton Nos, 1 and 2,

Located in the suburbs of Shawnee, and owned and operated by the Upton Coal Co. These mines were visited three times—March 3d, June 8th, July 7th, and each time found in excellent condition. Rees E. Williams, superintendent and mine boss.

Furnace, or Pleasant Valley,

Operated by the N. Y. & P. C. & I. Co., and located at Shawnee. There has been a fine plant put here, to work a tail rope for hauling the coal out of the mine instead of mules. This mine was visited March 1st, June 7th, and found each time in good condition. L. W. Butts, superintendent.

New York,

Operated by G. A. Blood, trustee; S. W. Butts, superintendent. This mine also was found in good condition when visited—March 1st, June 7th.

Fanny Furnace,

Operated by the Licking Iron Co.; located at Shawnee. This mine was visited twice—February 1st, June 10th—and each time found in excellent condition. Wm. Richards, superintendent and mine boss.

XX Shipping Mine.

This mine is located at Shawnee, and operated by the Ohio & Western Coal Co. I visited this mine twice—March 2d, June 10th—and each time found it in excellent condition. J. H. Mullin, superintendent; John Baillie, mine boss.

No. 3, Rock Run,

Operated by the C. & H. C. & I Co.; located between Shawnee and Straitsville. This is one of the finest mines in the district. I visited this mine three times—February 18th, July 6th, August 24th—and each time found it up to the requirements of the mining law. Vincent Furguson, superintendent; W. J. Berry, mine boss.

Ohio Coal Co.

This mine is operated by the Ohio Coal Co., and located on Rock Run. This mine is kept up well. I visited here twice—February 18th, July 6th—and found the mine in splendid condition each time. David Williams, mine boss.

Rend Shawnee.

This mine is also located on Rock Run, and operated by W. P. Rend & Co. This mine is well ventilated. The roof of this mine is very treacherous, and great care has to be practiced for fear of accidents. W. N. Black, superintendent; H. Dalrymple, mine boss. This mine was visited twice—February 18th, July 6th.

Black Diamond.

This is a small mine, located on the Straitsville division of the B. & O., south of the tunnel, and operated by Baylee & Soegard. I visited this mine September 16th, and found it in fair condition. George Soegard, superintendent and mine boss.

Wallace Nos. 1 and 2.

These mines are located on the C. & E. R'y, near Redfield, and operated by the Wallace Coal Co. I have visited these mines twice, October 14th and November 22d. On my last visit the air shaft was completed, and a furnace will be built at once. Wm. Wallace, superintendent and mine boss.

No. 5,

Located in Straitsville; property of the C. & H. C. & I. Co.; operated by Stalter & Essex. We had a little trouble here first of the season. The ventilation was not sufficient for the number of men employed in the mine, consequently a new furnace had to be built to accomplish this object, and on our last visit the mine was in better condition. We visited here three times—February 2d, February 16th, June 6th. Vincent Furguson, superintendent; E. Essex, mine boss.

No. 35.

This mine was visited February 17th and May 4th, and was found in fair condition. A miner named Elisha Watkins was mortally wounded by a fall of slate in this mine, May 2d, and died from his injuries the same day. This mine is owned by C. & H. C. & I. Co., and operated by James Stewart. Vincent Furguson, superintendent; James Stewart, mine boss.

No. 43.

This mine is the property of C. & H. C. & I. Co.; leased by Archibald Brothers. I visited this mine twice, and each time they were idle, hence no inspection. R. Archibald, mine boss; Vincent Furguson, superintendent.

No. 7.

This mine is the property of the C. & H. C. & I. Co., and operated by Raybold Brothers. I visited this place three times—February 16th, May 5th, August 24th. On my second visit, May 5th, we had to reduce the number of men in one part of the mine until a stronger current of air was taken there, equal to the number of men working. My last visit found the mine in good order. Wm. Raybold, mine boss; Vincent Furguson, superintendent.

No. 33.

I was at this mine on two occasions, but it was idle each time. Hence no inspection was made.

No. 9,

The property of the C. & H. C. & I. Co.; operated by T. Leyshon & Co. This mine was visited three times, and twice found wanting in coming up to the requirements of the law. Orders were given to better the condition, and our last visit found it considerably better. Vincent Furguson, superintendent; J. W. Thomas, mine boss.

Co-Operative,

Owned and operated by the S. C. C. Co., of Straitsville. E. S. Martin, superintendent; John Roan, mine boss. I visited this place twice, February 16th and June 5th, and found the mine in excellent condition each time.

Chicago,

Operated by W. P. Rend; located at Straitsville; has been idle for some time. On my last visit to Straitsville they were pumping the water out to resume operations.

No. 8, Shaft.

This mine is owned and operated by the Sunday Creek Coal Co.; located at Corning. This mine was visited four times—March 22d, July 12th, September 13th, October 29th—and each time found the mine in first-class condition. Malcolm Penman, superintendent and mine boss.

No. 7.

This is also the property of the Sunday Creek Coal Co., and operated by them. The ventilation has been rather poor in this mine for some time, so we had to shut

the mine down for two weeks to accomplish the object, and I am glad to say we got it done, by fixing old brattice work and also putting down a new air shaft at the working faces. Now we get at the outlet 40,000 cubic feet per minute. There are 275 men working in the mine, and ships more coal than any other mine in the Corning district. Fred Miller, superintendent and mine boss. We visited this mine seven times during the year.

No. 5, Shaft,

Operated by W. P. Rend & Co. This mine has been idle for some time, but has lately been opened by Mr. Rend. There was some difficulty met with here in getting the air-current through the working faces, as there were so many old holes to contend with, and brattice up. It has been accomplished, and now everything is all right. Our visit here was October 28th. Thomas Weatherborn, mine boss; T. N. Black, superintendent.

No. 3, Shaft,

Operated by W. P. Rend & Co.; located at Rendville. I visited this mine four times—March 24th, July 15th, September 13th, October 28th, and each time found it in good condition. The company has just completed an expensive plant, inside of this mine, to get coal out of the interior of the mine. It is expected that this tail rope will do away with thirty mules, and also double the output of the mine. T. N. Black, superintendent; Thomas Weatherborn, mining boss. David Wilson was mine boss here until the 25th of October, 1887.

No. 9,

Owned by W. P. Rend & Co.; has worked but very little this year. I made an inspection of it, March 23d, and found it in a very unsafe condition for either man or beast. The pillars had been taken out all around, without any system whatever. I wrote the company and advised the abandonment of the whole mine, and there has been nothing done there since.

Walnut Hill,

Operated by the Sunday Creek Coal Co.; located on the T. & O. C. R'y. This is a new mine. We visited this place August 22d. The air shaft was sunk but the furnace not built. G. W. Nelson, superintendent and mine boss.

Ferrara,

Owned and operated by the G. Butler Mining Co., Columbus, O. We visited this mine October 29th, and found things not in good shape. The mine has been laying idle all summer. Orders given to better its condition at once.

Tunnel Hill,

Operated by Davis & Harper; located on the T. & O. C. R'y, near Ferrara. We visited this mine August 22d, and found the mine in good condition. Daniel E. Davis, superintendent and mine boss.

No. 11,

Owned by the C. & H. C. & I. Co., and operated by Raybold Bros. This is one of the mines which were on fire during the big strike of 1884, and has been closed ever

since, but now reopened and operated. Cemented stoppings have been put up every place along the entries, so that nothing could come out to cause any danger, without giving ample warning. Another safe feature, the furnace is inside of all the old workings that were on fire. The superintendent, V. Furguson, has been very careful in fixing up the mine to get it safe, so as to protect life and property. We visited this mine August 24th. It was in excellent condition. Vincent Furguson, superintendent; Samuel Raybold, mine boss.

TUSCARAWAS COUNTY.

Pike Run,

Located on the line of the C. L. & W. R'y; operated by the T. V. C. Co. I visited this mine three times—January 2d, May 20th, November 10th, and each time found it in excellent condition. On my last visit I saw where they had commenced drawing pillars. After they come back with the pillar some distance, four feet of slate fell behind and exposed thirty inches of pure coal, already mined, above the slate, and they are preparing to get that out, which to all appearance is far superior to the lower vein. B. F. Humphries, mine boss.

Brock Hill,

Located on the C. L. & W. R'y, and operated by the Brock Hill Coal Co. This mine was visited four times—January 26th, March 28th, May 19th, November 10th, and each time found in good condition. The fan that ventilates this mine, on an average, propels from 30,000 to 35,000 cubic feet per minute. J. M. Shanks, superintendent; T. N. Phillips, mine boss.

Monarch,

Operated by the Monarch Coal Co. This mine is located on the P. C. & St. L. R'y, at Dennison. This mine was visited six times, first in spring. Water troubled this mine considerably. In the summer the mine took a creep and they lost two entries, or part of them. But at present everything is in splendid order, both ventilation and the roadways. My visits were January 27th, March 12th, May 9th, June 24th, August 31st, November 11th. J. C. Cross, superintendent; Sebastian Shane, mine boss.

Goshen,

Located on the C. L. & W. R'y, three miles south of New Philadelphia. In 1886 the output of this mine had a distance of one and one-half miles from the miner to the tipple, but last spring the company built a branch road, off the main line up a small valley, distant from old tipple about $1\frac{3}{4}$ miles, and opened out on the other side of the hill and made connections with the faces of the old mine. So their distance for hauling at present is short, as they built new tipples on the new branch, and they double their output with less mules than they used before. I visited this mine three times—January 25th, July 23d, August 15th—and each time found the mine in excellent condition. Arthur W. Brown, superintendent; John Dougel, mine boss.

Gosken Ridge,

Operated by W. Notsker; located on the Ohio Canal. This mine was visited twice and found in fair condition—April 29th, July 23d. There were less than ten men here each time.

Goshen Run,

Located on the Ohio Canal. Very little work has been done here this year. I made one visit here, and they were idle then. W. R. Jones, owner and proprietor.

Walton Ridge,

Operated by C. J. Nungesser; located on the Ohio Canal. This mine was visited July 21st, and found in splendid condition. C. J. Nungesser, superintendent; Wm. Hibbs, mine boss.

Prospect.

This mine is located on the C. & M. R'y; operated by the Turner Co-operative Coal Co. This mine was visited three times—January 24th, May 26th, September 19th. This mine has been neglected a little, but on my last visit it was greatly improved. Wm. Shackleton, superintendent and mine boss.

Stone Creek,

Located on the C. & M. R'y; operated by H. S. Odbert. This mine was visited twice—January 24th, May 26th, and found the mine in good condition each time. H. S. Odbert, superintendent; John Price, mine boss.

Eagle Hill,

Located on the C. & P. R'y, near Zoar Station, and operated by W. R. Jones. This mine was visited twice—March 11th, September 19th, and found in fair condition. New air way is nearly completed that will put the mine in splendid condition. W. R. Jones, superintendent and mine boss.

Davis.

This mine is located on the Valley R'y, at Mineral Point. I visited it twice, January 27th and September 22d. This mine has changed hands since my last report; it is now operated by G. Markley. On my last visit I found the roads in terrible condition, water coming in the empty cars on the main entry. Orders were given for improving the mine. G. Markley, superintendent.

Pioneer,

Owned and operated by Ridgeway, Burton & Co.; located on the line of the Valley R'y, at Mineral Point. I visited this mine three times—January 18th, April 19th, September 22d. This mine is kept in very good condition, considering the trouble that is met with in the way of large horse-backs, or faults. Some places they will get the seam five or six feet high for twenty or thirty feet long, then there will be the same distance without any coal at all, which makes it very difficult to carry air with the entries; but still there is not a miner in the mine suffering. J. J. Kline, ex-mine inspector, is superintendent and mine boss here.

South Side,

Coal and clay, owned and operated by C. Edward Holden. This mine was visited three times—January 18th, April 20th, September 23d. On my second visit a

squeeze had taken place here, and caused some damage; but all was fixed, and everything is going all right again, and mine in good condition. Thomas Osborne, superintendent.

Mahanoy.

This mine is located on the C. & P. R'y, at Mineral Point, and operated by G. L. Roberts & David Phillips; Evan Thomas, mine boss. I visited this mine twice, and each time found it in good condition.

Empire,

Operated by the Akron Strawboard Co.; located on the line of the Valley R'y, near Sandyville. I visited this mine twice, January 20th and April 18th. On my last visit they had the pillars nearly taken out, and since then the mine has been abandoned. T. F. Smith, superintendent and mine boss.

Peacock.

This mine is operated by Barkheimer & Gordon. It is located at Mineral Point. I visited this mine twice, January 19th and September 24th, and found it in fair condition. At this mine I met an old English miner, from the north of England, named John Pitt, who works a room in this mine and is seventy-nine years old. How is that for an old miner? David Barkheimer, mine boss.

Somerdale No. 1.

This mine is a new one, located on the W. & L. E. R'y, at Somerdale; owned and operated by J. H. Somers. This is a new field, opened last summer. All the plant is furnished with the latest improvements for the successful operating of these mines. The company has built quite a town here, and, I must say, they have the best company houses built in eastern Ohio. I visited this place three times, and each time found the mines in good condition. The mines are worked on the double entry system, and they have everything in good shape. Frank Somers, superintendent and mine boss. Mines visited January 21st, June 18th, September 21st.

Somerdale No. 2.

This is also a new mine, operated by the same company, and managed by the superintendent. Worked on the same system. There are 220 men working here at these mines. Mine visited January 21st, June 18th, September 21st.

Barnheisel.

This is a new mine, located on the W. & L. E. R'y, near Somerdale; operated by David Barnheisel. This mine has a very fine opening, and everything around the mine is substantial and of the latest improvement. Works opened on the double entry system, and in good condition. T. R. Lewis, superintendent and mine boss. Mine visited January 21st, June 18th, September 21st.

ORE MINES.

Ridgeway & Burton,

Located near Black Band Station. I visited this mine May 27th, and found nearly every place in the mine having an airway of its own. Ventilation was good. David Johns, superintendent; Cristian Mawrer, mine boss.

Beller Hill,

Operated by the Tuscarawas Iron Co. I visited this mine May 27th, and found it in good condition. Samuel Croxton, superintendent; George Brick, mine boss.

Dye Hill,

Operated by Andrews & Hitchcock. I was at this mine once, but on my arrival I found the men were on a strike and no one there.

REPORT OF ROBERT BELL, DISTRICT INSPECTOR, THIRD DISTRICT.

I herewith submit my second annual report of the condition of the mines in the Third District, for the year ending November 15th, 1887.

There is still a good feeling existing between the operators, superintendents, mining bosses, and the miners, in general, for the District Inspector, for which I am truly thankful. To be sure it cannot be expected that the inspector can have "plain sailing" at all times, for, having almost 5000 miners, and nearly 200 superintendents and bosses to contend with, there will be a rupture at times, particularly when the inspector is determined to enforce the law. I must say that at times I have had a little trouble with both bosses and miners, when enforcing the law, but in general it has ended in good feeling.

The mines in general are in a better condition at present than they have been since the law was passed. To prove my statement it is well known that a few years back a mine boss would as soon have a rattlesnake near his mine as an inspector, and for the last four weeks I have had no less than twelve letters from as many different mine bosses, to go and inspect their mines before I made up the yearly report. Mines will sometimes get out of order, even under the best management. I could point to several cases where a mine has been in the best condition, and in a few hours it has been nearly destroyed. I will take Card's shaft as an illustration. When I first visited that shaft I found 10,000 cubic feet of air per minute passing through it, which was but poorly conducted to the faces, and 225 men and boys working in the mine. With hard work and perseverance the mine was brought as near perfection as a mine could be, and had an average of 25,000 cubic feet of air per minute through the workings. In July a creep or squeeze took place which blasted all our hopes; for the creep had taken the air course, and when I visited the mine, August 1st, it was frightful to behold. I mention this case to show that even under good management a mine will get out of order, and I would advise mining bosses at all times to leave good strong pillars in their main entries.

During the past year there has been nine mines worked out, or abandoned, in the district, and fifteen new mines opened. There are other new mines that are not putting out coal at present but which will be, in a month or two, in full operation. I have tested scales twenty-six times this year, and have placed, in my report of the different mines, the result of each testing. There have been twelve air shafts, or second openings, sunk, five furnaces built, one fan erected, and three ladders for escape put in during the year, in this district. You will observe that there has not been many fans erected. The reason is that the mines of the district are generally shaft mines, and most of them have a heavy force of water to contend with; more steam power is needed, and the exhaust steam is utilized for ventilating puposes.

It has been reported for a number of years that the coal in the "Massillon district" was about exhausted, but it gives me pleasure to state that this has proved to be an error. At the present time there is one shaft, in the "New" Massillon district, shipping coal, and four other shafts going down as fast as possible. In the

Mahoning Valley there has been discovered a large basin of "Briar Hill," or "Block coal," and it is recently stated that another large basin of the same coal has been discovered, near Vienna, in Trumbull county. If true this will be a valuable addition to this well-known coal, which was supposed to be exhausted.

I desire to call attention to a very important point relating to the mines of Ohio. The statute provides at what age a person may work in a coal mine. I have had no inconsiderable trouble on this point. My experience has been that when a minor is approached as regards his age, he has been instructed (by parent or guardian) to say that he is between thirteen and fourteen years old, and the inspector has nothing to do but to take his word for it. In my opinion the inspector should be authorized by law to qualify the parent, or guardian, of all minors, found working in coal mines, in regard to their ages.

I desire also to draw attention to a feature of mining at two places in Columbiana county. One has shut down twice without paying their men, and the other closed last summer, and also failed to reimburse their workmen. I think there should be a stringent law passed to protect these men in regard to their wages. The present law is faulty, or they would receive the money due them for their labor.

Below will be found my traveling expenses during the year.

ROBERT BELL,
District Inspector, Third District.

TRAVELING EXPENSES OF ROBERT BELL, DISTRICT INSPECTOR OF THE THIRD DISTRICT, FOR THE YEAR ENDING NOVEMBER 15, 1887.

1886.		
November.	Railroad fare.....	\$ 4 50
	Hotel bills.....	5 45
	Livery	8 25
December.	Railroad fare.....	7 65
	Hotel bills.....	23 50
	Livery.....	10 00
	Freight and hauling test weights	4 35
	Expressage	50
	Postage stamps.....	2 00
1887.		
January.	Railroad fare	12 90
	Hotel bills.....	22 80
	Livery.....	13 25
	Expressage	50
	Freight on test weights	58
February.	Railroad fare.....	17 55
	Hotel bills.....	22 35
	Livery.....	5 00
	Freight and drayage on test weights.....	6 00
	Telegraphing	85
March.	Railroad fare.....	10 50
	Hotel bills.....	28 35
	Livery.....	14 00
	Freight and hauling test weights.....	4 46
	Telegraphing	60

April.	Railroad fare.....	\$ 7 05
	Hotel bills.....	18 70
	Livery	13 50
	Tape line.....	75
May.	Railroad fare.....	12 60
	Hotel bills	23 05
	Livery.....	12 50
June.	Railroad fare.....	11 35
	Hotel bills.....	24 95
	Livery	22 50
	Telegraphing	62
July.	Railroad fare.....	11 15
	Hotel bills.....	17 15
	Livery	5 75
	Freight on test weights	1 41
August.	Railroad fare	
	Hotel bills	30 00
	Livery	23 50
September.	Railroad fare	9 65
	Hotel bills.....	27 25
	Livery	18 25
	Freight on test weights	1 48
	Telegraphing	25
October.	Railroad fare	13 75
	Hotel bills.....	30 65
	Livery	7 75
	Freight on test weights	2 03
	Postage	3 00
November.	Railroad fare	5 10
	Hotel bills.....	15 85
	Livery	10 00
	Freight on test weights.....	2 11
Total		\$621 74

DESCRIPTION AND CONDITION OF THE MINES OF THE THIRD DISTRICT.

COLUMBIANA COUNTY.

Anderson's.

This mine is the property of the Manufacturers' Coal Co. In general it is a well conducted mine. On my visit to the mine, January 8th, I found that a squeeze or creep had taken place, which at first was thought not to be extensive. On my visit, June 30th, I found that the creep had done much damage by closing up the air course. I requested the boss to drive on the Bully entry night and day, if possible, so that there could be a clear course for the air to the upcast shaft. On October 25th I found the mine in a very good condition, Mr. G. Lewis, the superintendent and boss, having changed the air course, thus making a great improvement

in the mine. I am sorry to say I was obliged on two occasions to stop the entry, as it was too far ahead of the air. On the first occasion the boss was not aware that the law had changed. On the second occasion, the boss being sick, the entry man took advantage of his sickness and did not keep the air course up to the requirement of the law. The entry man is abusing me yet because I would not permit him to work in bad air. On July 7th I tested the scales and found them in good condition. Seventy men are employed, and 17,000 cubic feet of air per minute circulates through the mine.

Old Shaft.

It would be difficult to say to whom this mine belongs. I visited it January 6th, and found it under the supervision of Peter Brown & Son. It was in a very deplorable condition; the excuse given was that the boss had to change the air in order that the shaft would not press up. I allowed them four days in which to put the mine in a proper condition. I made a second visit, January 10th, and found that the boss had turned the air into its proper course, and as a result the air was in better circulation. I advised the boss to keep the mine in such a condition that we would have no further trouble. Having found the scales and weights out of order I requested the boss, Peter Brown, Jr., to have them repaired, and I understand it was done. I again visited this mine, June 29th, and found that the O. & Pa. Coal Co. were working the mine, with J. C. Brown mining boss. The ventilation was fair, with the exception of an entry; I ordered it stopped until the air was within sixty feet of the face of the entry. I again visited this mine, October 18th, at the request of the miners. The ventilation was bad, and there was neither boss nor superintendent to this mine, and Mathew Brown had leased it from the O. & Pa. Coal Co. Mr. Brown did not comply with my request to meet me for consultation. I told the men they were violating Section 298 of the mining law of the state, and I referred them to the penalty; then they left the mine in a body. Ben Roberts was engaged as boss, and wished the men to go to work next day, but I would not permit it until the mine was put in proper condition. This was done. I tested the scales and was satisfied. Twenty-four men are employed.

Slope.

This mine is the property of the O. & Pa. Coal Co. I visited the mine March 11th, June 27th, and October 19th. The ventilation was excellent. James Black, the superintendent, was not aware that the law in regard to the break-throughs had been changed, and I had difficulty in making him comply with the law. On my second visit both entries and rooms were above sixty feet between the break-throughs and the air was not good. I requested a room to be driven from the Black entry to the left-hand entry and a door placed in the Black entry. At present the mine is in fair condition. There has been three bosses in this mine during the last year. David McPherson is boss at present. Ninety men are employed, with 14,000 cubic feet of air per minute.

Empire.

This mine is leased by S. S. Carnahan from the O. and Pa. Coal Co., and he acts as superintendent and boss. The mine was visited, March 11th, July 1st, and October 21st. The mine is ventilated by the fan from the slope. They are taking out the pillars at present. The mine is in excellent condition. Twenty men are employed.

Leetonia.

This mine is the property of the Cherry Valley Iron Co. I visited it December 15th, April 13th, July 11th, and October 4th. It is one of the best conducted mines in the district. John Tetlow is superintendent, and John Briggs, mining boss.

Washingtonville.

This mine is the property of the Cherry Valley Iron Co., and, like the Leetonia slope, is well conducted. Visits were paid to the mine, December 18th, April 13th, July 11th, and October 6th.

The old Roller mine is worked in connection with this mine. John Tetlow is superintendent, and Joseph Tetlow, mining boss.

Farmers'.

This mine is owned by the Manufacturers' Coal Co., James Smith being superintendent and boss. I visited the mine March 8th, July 7th and October 22d. It has been idle nearly all summer. Generally it is in good condition. On my last visit the Hunter entry was slack of air. I requested the entry to be pushed through with all possible haste, as it had to go but a few yards and there would be good air throughout the mine. Fifty men are employed.

Foster's

Is owned by the Columbiana Coal Co., Jesse Thornton being superintendent, and Daniel Folson, mine boss. The ventilation is most excellent. Visits were made March 10th, July 7th and October 26th. Forty men are employed.

Hays'

Is leased from the O. & Pa. Coal Co., James Strapley being superintendent and mine boss. I visited this mine January 11th, July 5th, October 21st and October 28th. I thought the mine had been cleared of black damp, but, through the change of proprietors, the mine has been neglected. The stack and furnace shaft had been blown down and the furnace neglected. On October 21st I gave the boss four days in which to have the mine repaired. On October 28th I found that repairs had been made, and the mine was in a fair condition. Twenty-two men are employed, and if the furnace is fired up there is about 9,000 cubic feet per minute.

Pine Grove.

This is an old mine, opened by the Pine Grove Coal Co., of East Palestine. Superintendent, James Flowers; mining boss, Jas. Mitchel. I notified the company to put in an air shaft. The mine has been idle nearly all summer, on account of the miners not having received their pay. Twenty men are employed. I visited the mine January 29th.

New Shaft.

When I was first appointed to this office I found this mine in a very bad condition with gas, but, by perseverance and hard work by the mining boss, the mine was put in a very good condition. There has been very little gas in the mine of

late. I was called here, January 7th, on account of faulty boilers. I requested the superintendent, Robert Vassey, to have the boilers overhauled. The boilers repaired, I examined the mine, and found it in good condition. I again visited the mine, June 28th, and was perfectly satisfied with the ventilation. From the above date the mine has been idle, owing to the miners not receiving the pay due them, this being the second time they have been deprived of their wages. On October 24th I visited the mine, at the request of a gentleman who expected to take charge of it. I found that the pumps had not worked since the latter part of June, and water had risen in the mine to that extent that we could not advance as far as I wished. I told him he should be very careful when he got the water down, as I feared the break-throughs would be damaged and gas would accumulate in the workings. Edward Boyle is mining boss.

Prospect Drift.

I visited this mine February 22d and May 10th. The mine was idle on both occasions, and has been idle ever since. George Suthran is superintendent; James Dixon, mining boss; and Prospect Hill Coal Co., proprietors.

Prospect Slope

Is a mine where great improvements have been made, and it is in excellent condition. A more amiable feeling exists between the company and miners than formerly. The proprietors, superintendent and boss are the same as in the Prospect Drift mine. Forty-one men are employed, and 5,000 cubic feet of air are in circulation through the mine.

Star

Has been idle all this year. I visited the mine May 11th.

Pleasant Valley.

I visited this mine February 23d, May 11th, and August 19th. An air shaft has been put down and a good furnace has been built for ventilating purposes, and the mine is in very good condition. On August 19th I found that there was indication of a creep in the mine. I requested the boss, James Suthren, to leave larger entry pillars or he would have trouble. This mine is the property of the Suthren Coal Co., James Suthren being superintendent. Forty men are employed.

Coleman.

This is a new mine, the property of the Albright Coal Co. Thomas Prosser, superintendent and mine boss.

Forehead.

This is the property of the Evans Coal Co. Thomas Morris, superintendent and boss. Seven men are now employed, with a prospect of employing thirty or forty during the winter.

Quaker Valley

Is a new mine; opened by Summer & Co.; J. H. Summer being superintendent and boss. Only twelve men were employed at the time of my visit, but I was told that the company expected to employ about forty men this winter. I did not measure the air, but requested the boss to keep the mine in proper condition, as I would make regular visits and enforce the laws.

CARROLL COUNTY.

Osborne

Is the property of the Osborne Coal Co.; Samuel Madison being superintendent and boss. I visited the mine, March 9th, July 6th, and October 17th, finding the mine in excellent condition throughout. Seventy-three men are employed.

JEFFERSON COUNTY.

Diamond.

I visited this mine July 5th, and was perfectly satisfied with it; the ventilation being good. The mine has been idle for a number of months this summer. I am told that the company are prospecting for another seam of coal. The mine is owned by Messrs, S. N. & W. G. McCullough, and bossed by Isaac Thomas. Forty men are employed.

Groff.

This mine is worked out.

Sugar Hill

Is an old mine; reopened by R. G. Wallace, and bossed by W. H. Mann. When I entered the mine I did not think there was prospect for much coal. I drew the boss's attention to the fact that it was an old mine, and told him if the prospect for coal seemed better, he would be obliged to put down an air shaft, for at present the mine is ventilated by a fire basket, at a hole, dug out at the side of the hill. I found that No. 2 entry was ahead of the air, but, as the boss said he was only prospecting that way, I did not stop it. The condition of the mine was fair, with the exception of No. 2 entry.

MAHONING COUNTY.

Allen.

I visited this mine March 28th. Only six men were working. Since my visit the mine has been abandoned.

Austin

Is the property of Tod, Wells & Co. I visited the mine January 28th, February 3d, June 8th, and September 23d. The mine was idle on my first visit. The second time I was called here to test the scales; my weights having miscarried I was obliged to leave without testing the scales, so I left the testing in charge of a com-

mittee, consisting of the operators, miners, mining boss, and check weighman, in order that justice might be done. The scales were tested shortly after my departure, and all parties were satisfied with the result. I found the mine in a good state at the time of my third visit. At my last visit the mine was idle, owing to a trouble between operators and miners. The present superintendent is E. B. Wells, and W. R. Davis, mining boss, both having taken charge recently. One hundred men are employed, with 10,000 cubic feet of air per minute.

Beloit

Is the property of Frank Zeigler. He also superintends it. Wm. Wild is mining boss. I visited the mine February 21st, May 9th, and August 17th. The mine is well conducted; about twenty men are employed with 5,000 cubic feet of air per minute.

Brownlee.

I visited this mine four times during this year. On making a thorough examination of the mine I found that the shaft when sunk was too small for all practical purposes. When the cage was either ascending or descending the air that afforded ventilation was checked to such a degree that the mine was never properly ventilated; in fact the mine was not opened in a systematic manner. I notified the company to sink another opening or I would be compelled to take action against them. The company commenced to sink a second opening, June 9th. I ordered a reduction of the number of men until the air shaft was down. On September 21st I was called here to test the scales. I found them out of order and requested the company to have them adjusted. My request was complied with. The air shaft being down by this time, I examined the mine and found it in a good condition throughout, and the miners well satisfied with the ventilation.

Fosterville.

I visited this mine November 16th, and found it almost finished. The mine is now a thing of the past, having been finished in February. J. Head, superintendent; Kidgwin Head, mining boss.

Leadville

Is still idle.

Poland.

Three visits were made to this mine. On March 26th I was not at all satisfied with the condition of the mine. The excuse given for the state of affairs was that the boss had given to a few of the men a contract to do the dead work, and thus the mine had gotten out of order. At the above date the boss had just taken charge of the mine, and he promised to put it in working order. On June 9th I found matters in a better state than on my former visit; in fact the mine is in a good condition, considering the disadvantage with which the boss has to contend, in bringing the air about a mile and a half from the main shaft. On September 15th all things were in a fair condition, with the exception of one entry, which was above sixty feet from the last break-through. I ordered it stopped at once. Tod, Stambaugh & Co. are the proprietors. A. J. McCartney, superintendent; Wm. Young, mining boss. Sixty-five men are employed.

Witch Hazel.

I made five visits to this mine—November 17th, March 22d, June 21st, August 27th, and September 21st. The pillars are being drawn back. The ventilation is good throughout the mine.. My last visit to this mine was owing to information received about a broken rope, but on reaching the mine I found that the company were attaching two new ropes to the machine. This mine is the property of the Witch Hazel Coal Co. Chas. Westlake, superintendent; Hugh Evans, mining boss. Forty-six men are employed.

Austin.

This mine was visited January 28th, February 3d, June 3d and September 23d. I have always found this mine in good condition as regards the ventilation. In February I was called here to test the scales; but, my weights not arriving in time, I left the testing in charge of the weighman and a committee of the miners. The weights arriving, after I left, the scales were adjusted to the satisfaction of all parties. The mine is the property of Tod, Wells & Co. E. B. Wells, superintendent; W. R. Davis, mining boss. One hundred men are employed.

John Henry.

This is one of the mines that lost all its buildings and machinery by fire last year. I made three visits to this mine. February 1st I found that the plant had been renewed, but safety catches had not been placed on the cages. The mine was idle at the time of my visit, so I notified the boss by letter to put catches on the cages, or compel the miners to enter and leave the mine by one of the air shafts with ladders in them. I again visited this mine, June 4th, and thoroughly examined it. The slides in the shaft were out of order. I requested the boss to have it repaired immediately, so that we might have no accidents with them. I was not satisfied with the ventilation. I requested it to be brought up to the standard. On September 24th I found it in good condition throughout. J. M. James is mining boss, and Homer Baldwin, proprietor. Sixty-eight men are employed.

Pennell.

I visited this mine January 31st and July 14th. The mine was idle on both occasions. It will soon be finished. It is owned by the New Lisbon Coal Co. J. Head, superintendent; John Mowbach, mining boss. Twenty-six men are employed.

Harroff,

Was worked out this year.

National

Was idle almost all summer. It is owned and operated by J. M. Walters & Co. The condition is fair. I visited this mine December 16th, April 13th and October 5th. On my last visit 134 men were employed. R. Wainwright is superintendent, and James Thompson, mining boss. One hundred and seventy-five men are employed.

Fairview.

Is owned by the Fairview Coal Co., Wm. Warner being superintendent, and John Heilman, mining boss. I visited the mine December 17th, April 12th, July 12th and October 5th. It is a well conducted mine. Last year I was obliged to complain of the traveling, which was very bad. This has been improved, however, and the company have put into the mine a tail rope with an engine at the top of the slope, which draws a trip of coal about 700 yards and places the coal at the tipple. It is a perfect success. Sixty men are employed.

Palmer's

Is owned by Andrews Bros.; J. Nelson, superintendent, and Rob't Hunter, mine boss. I visited this mine March 25th, June 8th and August 23d. In general it is well conducted. On June 13th I requested the company to put down a second opening. Sixty-seven men are employed. Since the above writing I have been informed the second opening is being made.

Manning

Has been a well-conducted mine throughout. I examined the mine March 23d, June 11th and November 12th. In June I found the company had commenced to draw back the pillars. I also observed that the stoppings in the main air course were broken down. On inquiring the cause, I learned that a lawsuit was pending between the company and another party in regard to royalty. The party bringing the suit had examined the mine, and left the break-throughs in the condition described. I ordered them repaired at once, as the mine suffered in consequence of their bad condition. On August 29th I found the mine in good condition. I tested the scales November 12th, finding them just. Manning Coal Co., owners; John Ford, superintendent; John Goad, mine boss. Fifty men are employed.

MEDINA COUNTY.

Card

Is the property of H. P. Card. At the close of last year the company put down an air shaft, and placed two boilers and the pumps at the foot of the shaft. When I visited the mine, December 7th, I found it to be one of the best ventilated mines in my district; likewise, on my visit April 19th I was satisfied with the state of the mine. On May 23d I was called to the mine, owing to information which reached me to the effect that the mine was out of order. I found little truth in this statement, however. One door in the rock entry had been neglected, which, being closed, the whole force of air was driven up to the face of rooms and entry. I next visited the Walter's entry, it having been reported that it was out of order. I found this to be the case, and requested the boss to have everything put right. On August 1st I learned that a creep had taken place in the rock entry, thus closing the air course in that part of the mine. I again visited this mine, November 1st. The boss, T. Prosser, had cut through the creep, but the air was still bad in the rock entry, although the rest of the mine was in good condition. A. V. Dibble, superintendent, and, at present, Cyrus Evans, mining boss. Two hundred men are employed.

Diamond

Is one of the oldest mines in the state, and one of the best ventilated in my district. I visited the mine April 21st, August 2d and November 3d. It is owned and superintended by W. B. Coleman, and bossed by Jos. Jordan. Only twenty-five men are employed at present.

Excelsior No. 1.

Visited this mine three times this year. It is now worked out.

Excelsior No. 2.

Last year this mine was well ventilated and conducted, and thus it remained for a short time. On April 20th I found matters greatly changed. At times the miners and drivers were obliged to leave the mine on account of the black damp which had accumulated. A connection had been made between Nos. 1 and 2, and, as the pillars in No. 1 were being drawn back, black damp accumulated and was coming through to No. 2. The company were thinking of sinking an air shaft between the two mines. I requested them to begin at once. My request was complied with. On August 3d I found the shaft was down, but there were still traces of the black damp. I told the men they should leave the mine whenever they thought it unsafe. Credit should be given to the boss, J. S. Rees, for his efforts to keep the mine as safe as possible under the circumstances. At the time of my last visit, November 4th, the mine was in a better condition, the boss being very watchful in regard to the black damp coming from No. 1. This mine is owned by the Excelsior Coal Co., and superintended by Fred Rees. One hundred and twenty-five men are employed.

Collier

Was purchased by Wm. B. Coleman from the Collier Coal Co. I visited the mine November 2d, finding it sadly out of order, W. H. Bassett, the mine boss, having just taken charge. It will soon be in a better condition. Nineteen men are employed.

Sharon

Is a new mine, owned by O. S. Jacobs. The boilers are placed at a proper distance from the mouth of slope. Less than ten men are employed at present.

PORTAGE COUNTY.

Diamond

Was visited December 2d, March 31st, June 23d, and September 1st. The mine was working at the time of my first and last visit. The ventilation is good throughout. P. S. Kimberly, owner; W. G. Murdock, superintendent; Abel Dore, mining boss. Forty-eight men are employed.

Scott

Is owned by the Scott Coal Co. On December 2d I found the air was not brought n o the mine in a very satisfactory manner. I requested the boss to look to the

break-throughs, so that the air could be brought to the face of the workings. On December 4th matters were not much improved. On visiting the mine, March 31st, I found a great improvement, James Sutliff having been engaged as boss some time previous. I suggested some improvements which could be made. Credit is due the boss for his efforts to improve the mine. Inspected again, June 23d and September 1st; improvements still going on. Fifty-seven men are employed.

Hutson's

Is the property of Hutson Coal Co. Having visited this mine January 5th, I found the company had sunk a new shaft, the other being too small. The ventilation was poor; so with C. Maxwell, the boss, I planned a new air course, thus hoping to improve the mine. I also recommended heavy timbers to be placed at the foot of the new shaft. I inspected the mine April 1st, and found matters improving. On June 14th I notified the superintendent that he should not permit the miners to go up and down the shaft. There is self-dumping machinery here, and I do not think it is safe for the men to ride on it. It is very difficult to bring a mine up to the standard after it has been neglected as this mine has been. I again visited the mine September 3d, on which occasion I stopped one entry and a room, because they were more than sixty feet ahead of the air. I was again called here to test the scales, and found them out of order. I requested the company to have them repaired. I left my weights until the scales should be repaired. The mine was then idle, but, at the request of the boss, I examined the mine, finding it in pretty good condition. H. D. Marble, superintendent. Sixty men employed.

Wilson's

Was worked out this year.

STARK COUNTY.

Cleveland

Is owned by the West Massillon Coal Co.; Philip Sonhalter, superintendent; Robert Moore, mining boss. I visited the mine December 14th, finding it in fair condition. I was called here January 29th, to test the scales. Having requested a committee of the men to remain, I tested the scales, finding them in satisfactory condition. I again visited this mine March 4th, finding sufficient air for all practical purposes. The air was not carried well up to the working places; the reason being that the air was not confined properly in the air courses. The boss promised to look to the air in future. On August 15th I again tested the scales, finding them correct. I was called here by the death of Robert Bingen. I measured the manholes at the bottom of the slope and found that the law was fulfilled. The coroner of Stark county held an inquest and reported the result. On October 1st I found the mine in good condition.

Beaver Run.

A rumor being afloat that a creep had taken place and closed up some of the miners, I visited the mine, the evening of November 26th, finding the miners coming out hearty and well. I found a creep had taken place between the second and third entries over an area of 200 square yards, and had broken itself upon the entry pillars. No one was injured, and the air course was all right, so the company had cleared the way on the main entry and then all was well. I inspected the mine

March 3d, and April 28th, and found it in excellent condition. On June 13th I tested three sets of scales, finding them correct. On September 16th I found the mine in a good state, with the exception of one entry, which was more than sixty feet ahead of the air. I ordered it stopped at once. This mine is the property of the Beaver Run Coal Co.; R. Keller, superintendent; Julius Deck, mine boss. One hundred and twenty-nine miners employed.

Justus

Was examined November 26th. It was worked out January, 1887.

Camp Creek.

I was summoned here November 19th, by the death of August Dangle, who lost his life by a fall of coal. April 29th, and June 17th, I found the mine in excellent condition; August 13th the mine was idle. O. Young Coal Co., owners; Joseph Collier, superintendent and boss. One hundred and eight men are employed.

Elm Run

Is the property of the Elm Run Coal Co.; Wm. Penman, mine boss. The company are drawing back the pillars, which makes it dangerous for the miners. I am sorry to say three fatal accidents have occurred during the last year. Inquests were held by the coroner, and reports made. Visits were made to the mine November 22d, April 27th, May 13th and August 8th. I always found it well ventilated, and, with the exception of the bad top with which the miners must contend, it is in a good condition. Eighty-six men are employed.

Minglewood.

I visited this mine December 21st, owing to the death of Richard Taylor. On December 29th I made a thorough examination of the mine. I requested the company to repair the slope, which was in a dangerous condition. I also forbade the drivers to go into one of the entries until the roof should be made safe. Men were put to work at the roof, and by this time the slope, also, has been repaired. I have always found the mine well ventilated, which is greatly needed, as the mine makes a certain amount of gas. On January 12th I tested the scales, and, not being satisfied, I ordered them repaired. I again tested them, February 26th, and found them all right. In April a creep took place in a new road cut through old rooms, enough pillars not having been left to support it. Not as much damage as was expected was done. The company blasted through the fall, and all is again well. I visited the mine July 19th, and must say that Wm. Bumgardener has worked well to bring the mine to perfection. It is now one of the best ventilated mines in the district. Jas. Mullin & Sons, owners; Tobias Ellser, superintendent. The mine affords employment for one hundred and eighteen men.

Osnaburg

Is the property of the Osnaburg Coal Co. Zack Doll, superintendent; John Zuper, mine boss. The mine was visited January 13th, May 25th and August 11th. In general it is a well-conducted mine, but at present it is giving up a large amount of black damp. A new air shaft has been sunk, and a furnace built to improve the mine. I requested the boss not to neglect the furnace. This mine employs sixty-two miners.

Lawrence, or Blaine.

On December 21st I tested two sets of scales at this mine. Not being satisfied, I requested the boss to notify the company concerning them. At the same visit I examined the mine, finding it in good condition. Being in the neighborhood, I tested one pair of these scales, on December 30th, finding them all right. I tested the other set January 12th, and was satisfied. I again visited the mine, April 25th and July 18th, the mine being idle on the former occasion. Burton, Ridgeway & Co., owners; J. P. Burton, superintendent; John Hodgson, mine boss. One hundred and fifteen men employed.

Thomas

Employs less than ten men. On May 12th I found it idle. W. L. Thomas, owner and boss.

Greentown

Was inspected January 21st, May 14th and September 25th. This is a well-conducted mine. Smith & Borst, owners; Lewis Smith, superintendent; P. Dearolf, mine boss. Twenty-six men employed.

Chestnut Grove

Was visited March 11th and September 29th. It has been idle nearly all summer, for lack of men, there being only three or four men at the mine. It is in a fair condition. Owned by the Valley Coal Co.; Jas. McLinden, superintendent and boss.

Hadley No. 1

Was inspected January 13th and May 24th, and I was well pleased with the condition of the mine. Hadley & Cook, owners; J. K. Hadley, superintendent; C. M. Baum, mine boss. Eleven men employed.

Hadley No. 2

Is owned by Cook & Hadley; C. G. Williams, mine boss. I visited this mine January 14th and February 24th. The mine was in rather a rough condition, owing to the amount of water in it, due to the wet weather. The mine was idle all summer. The company expect the mine to work this winter. Forty men were employed.

Hadley No. 3

Is owned and bossed by the same persons as Hadley No. 2. It is a new mine, and is expected to be very extensive. On February 24th it was not far in from the drift mouth. On April 26th I found that they had "holed" into an old mine. I requested the boss to make the old shaft, into which they had "holed," larger, and to put a furnace there, which he promised should be done. I again visited the mine May 25th. The furnace had not been built, but a temporary furnace put in, which did not afford sufficient ventilation. I ordered an entry stopped, and got a "blessing" for so doing. I visited the mine August 10th, owing to information received. The mine was idle, but I examined it nevertheless. I found one door, the principal one, so badly broken that I could creep through it. I was well satisfied with the new furnace built, but, as there was no stack at the top of the air shaft, it was

useless as a ventilator. I notified the company to put up a stack, which, when done, will be a decided improvement to the mine. Fifty-five men are employed. Since my last visit I have learned that the mine is in a good condition.

Alliance

Was inspected December 3d, May 13th, and October 3d. The state of the mine was not very good. Doors were out of place; others were hung in such a manner that they would not work. I requested the superintendent, Mr. Cunningham, to put the mine in order. On my second visit the mine had "changed hands," and was idle, in which state it was more or less all summer. Having gone through the air course, with Thomas Hnghes, the boss, at the time of the third visit, I requested him to commence at the foot of the air shaft and put up new stoppings at all breakthroughs, this being the only way to get the air to face the workings. The mine is not in a good condition in any respect. Alliance Block Coal Co., are the owners of this mine.

No. 6

Is the property of the Willow Bank Coal Co. I tested the scales on two occasions, finding them correct. I examined the mine five times during the year, being perfectly satisfied with the ventilation. I think this mine has the worst top I have seen for a long time; in fact it is dangerous. I requested the boss always to keep plenty of props, so that the miners could have them if needed. I also warned the men to be very careful that we might have no accidents to record. The mine is well conducted by Charles Brinkamp, mine boss; seventy men are employed.

McKinley

Was visited December 28th, and April 5th. It is now worked out.

Youngstown.

This mine is owned and operated by the Youngstown Coal Co.; George W. Phillips, superintendent and mine boss. There has been difficulty of a very serious nature in this mine during the last year. Having broken through into the Clarke shaft, and there being nothing but pillars, it was almost impossible to make the air travel. This was not the only difficulty, as the Sprankling mine was in the vicinity of Clark's shaft, and was standing full of water; there being neither map nor plan of these mines to which to refer. The boss was determined to be through, and, as soon as he reached the solid coal that lay between the two mines, he kept the drills going ahead of the men working. Another difficulty with which the miners have to contend is the old Clark's shaft, which was abandoned owing to its flooding by the rising of a creek. Last winter it was feared there would be a similar occurrence. Every precaution was taken against it by both company and miners, the company spending hundreds of dollars to secure the safety of the men and to get the coal yet remaining in the two mines. The men formed a committee, leaving the mine when the water reached a certain height. When they reached the Sprankling mine they had to stop work at times, owing to the black damp from the old mine. But hard work and perseverance on the part of the boss, and patience on the part of the men, have worked wonders, for on my visit September 9th, I found it in pretty fair condition. The mine was examined four times this year, and I tested the scales June 15th, finding them correct. Sixty men are employed.

Anderson's

Is owned by Howells Coal Co.; Anthony Owens, superintendent; Chas. Graybill, boss. It is a new mine.

Fox Run

Was visited February 28th and May 27th, it being idle on both occasions. I found the mine very poorly ventilated. It is ventilated by means of a fire pan, or basket, at the bottom of the air shaft. I requested the boss to put the mine in a better condition. Bowman Coal Co., owners; Wm. Plasket, boss. Twenty-two men are employed.

Evansdale

Was also visited February 28th and May 27th. It was flooded last winter. Not much work has been done this last summer, only eight men being employed. Valley Coal Co., owners; Daniel McCarty, mine boss.

Willow Spring

Is, in general, a well-conducted mine, but it was flooded last winter. Edward Jones had trouble with the mine all summer, for it took a creep, nearly closing up the air course and doing considerable damage. On August 12th I found the mine in as good a state as could be expected under the circumstances. The boss expected the main entry to run through the hill in a week or two. The mine is divided into an eastern and western side, the former being in good condition. Burton, Ridgeway & Co., owners. Forty men employed.

Wade

Is owned by the Wade Coal Co., and furnishes employment for forty-seven men. John C. Allen, superintendent; James Perkins, mine boss. This mine has been flooded, and it has cost the company a goodly sum to get the water out. I visited the mine March 1st and May 24th, finding it in a good condition at the last visit, the company having commenced on the double system.

Hern Brook

Is owned by Burton, Ridgeway & Co.; David Jones, superintendent; William Crookson, mine boss. I visited this mine December 24th, April 7th, July 22d, August 22d and November 14th, always finding it well ventilated. The mine is troubled by a large body of water, the most of the men having to work in a wet condition all day. I received many complaints that the company were violating the law in regard to safety catches. On visiting the mine I found catches on one cage provided for the men to descend and ascend the shaft. The other cage was not provided with catches, but it was used only to carry down nails and timber. I explained the law to the men, telling them the company had fulfilled the law, by having a second opening and ladders in for the use of the men in descending and ascending the mine. On examining the air shaft I found there was a heavy fall of water going down the shaft, making it almost impossible for the men to travel that way. I requested the company, through the boss, to line the shaft in such a way that the water would be carried down the sides of it, which they promised to do as

soon as possible. On August 22d I tested the scales; finding them out of order, I requested the company to have them repaired, which was done to the satisfaction of company and miners. I am sorry to say that the miners violated Section 300 of the state mining laws, by more than ten of them riding on the cage at the same time. I advised the miners to obey the law, as it was made for their benefit, and by violating the law they subjected themselves to a fine of fifty dollars, or three months' imprisonment, or both. One hundred and twenty-two miners are employed here. Recently I have learned that another stream has broken loose, and flooded nearly half of the mine. Having met the superintendent, he told me he thought the breaking away of this last body of water would dry the air shaft.

SUMMIT COUNTY.

Burnett

Was visited January 18th, May 18th, August 4th and November 5th. This mine is well conducted in all respects, generally, but on two occasions I found one entry, and another entry, and a room ahead of the air, hence I requested the men to quit work until the air was brought up according to law. With this exception the mine was in good order. This mine is the property of Brewster Coal Co.; Frank Meachem, superintendent; John Hutchinson, mine boss. Ninety men employed.

Dennison.

I visited this mine January 19th, and was much surprised to find eighty men employed, for by the appearance of the mine, in August, 1886, I thought there was not much coal to be worked. I found things in a good state, with the exception of one entry, which was raising the hill and was ahead of the air, so I ordered the men to stop work until it was rectified. On February 17th I tested the scales, finding them out of order. May 19th the mine was idle. On August 3d I again stopped an entry; otherwise the mine was in good condition. I was requested to test the scales October 15th, but finding it impossible to reach there until the end of the month, I notified the men to that effect. I reached there October 31st, finding that they had called a gentleman from Akron to test the scales, he finding them in order. I examined the mine, the company having built a good furnace to aid in ventilation. I found a number of breakthroughs out of order and asked that they should be repaired, it being useless to have a furnace if the air course was out of order. This mine is the property of the Dennison Coal Co. Thos. D. Williams, mine boss.

Lake View.

I visited this mine January 20th, finding the ventilation good; again on May 17th, finding the mine idle. September 27th I tested the scales and was satisfied with them; I also examined the mine at this visit. They are drawing back the pillars. The mine will soon be worked out. It is owned by the Lake View Coal Co. A. J. McCartney, superintendent; Wm. Phillips, boss.

Lake View No. 2

Is a new shaft. I am informed that the company are going to introduce machinery into the mine, for the purpose of getting the coal. This will be the first mine in the district in which machinery has been tried, and time will tell with what satisfaction. Proprietors, etc., same as above mine.

Payne

Was inspected, January 20th, August 17th, and September 27th. The ventilation is good, but there are drawbacks in this and the Lakeview mine which made it unpleasant both for company and men. The coal lies in a very rolling position. Summit Coal Co., owners; John Bees, superintendent and boss. Sixty men employed.

Talmadge.

I was called to this mine, owing to information received that the company were employing more than ten men at one time. Visiting the mine May 18th, I found that fifteen men were employed, and in the winter between thirty and forty. The miners were just leaving the mine, and complained of foul air. The company were sinking a new air shaft. I requested them to put on a double shift so that it would be done soon. I revisited the mine August 5th, finding it idle, but the air shaft was down. When I examined the mine it was in good condition. H. Thomas, superintendent; Philip Thomas, boss; Thomas Coal Co., owners.

TRUMBULL COUNTY.

Stewart.

This is a new shaft, the property of the Morris Coal Co.; Thos. E. Thomas, mine boss. I visited the mine September 13th. The miners had just commenced to work the coal. I requested D. D. Morris, the superintendent, to raise the stack at the back shaft, that there might be no complaints of foul air. Eighteen men were employed with the prospect of more in the near future.

Hason

Is also a new shaft, owned by the Morris Coal Co.; Thos. E. Thomas being mine boss. On visiting the shaft September 14th, I found that it was down one hundred and twenty feet; I was told it had to go two hundred feet from the surface.

Powers'

Is an abandoned mine that was worked twelve years ago, and at present worked by Sampson, Guy & Co.; Thos. J. Williams being mine boss. I called at the mine March 24th, and June 22d, finding not more than ten men employed, with the prospect of an increase in number. I requested Mr. Williams to have sufficient air in the mine before he increased the number of men. It being an old mine, I told him he must put down an air shaft according to law.

Garfield

Was visited three times this year. It is now worked out.

Garfield No. 3

Is a new mine, the property of the Garfield Coal Co.; John Morris Jr., superintendent; Thos. G. Phillips, mine boss. It was visited September 13th, at which date the company had commenced the entries from the bottom of shaft.

Peacock

Is owned and operated by Sampson, Walker & Co. ; George W. Canfield, superintendent ; David Griffiths, mine boss. It furnishes employment for seventy men. It is well ventilated, but the roads are bad and the slope is in a very dangerous condition. On February 2d I called the attention of the boss to the condition of the slope. I was told they were getting ready timber to repair it. On June 2d I found the mine idle. None of the officers being at the mine, I got a lamp and made a tour of the mine, finding that my instructions in regard to the slope had not been carried out. I notified the company that the men must not work until the slope was repaired. On September 22d the mine was still idle, owing to a disagreement between company and miners. They had begun to repair the slope, but work had stopped. I was informed it would be made safe before the men commenced work.

Seceder

Was visited March 24th, June 22d and August 30th. This mine is not well conducted in any respect. A sufficiency of air enters and leaves the mine, but it is not brought to the face of the workings. I found the mine slightly improved June 22d, but there was some steam from one pump mixed with the air, making it very disagreeable. I requested the pump to be removed to the bottom of the air shaft, that the mine might have the benefit of the exhaustion. The company have commenced to draw back the pillars. I think the mine will soon be worked out. Sampson, Walker & Co., owners ; George W. Canfield, superintendent. Forty men employed.

Rogers, or Vienna,

Was visited January 26th and June 23d. This mine has been a dead loss to the Morris Coal Co. I think not 20,000 tons of coal has been mined here, after they have expended a vast amount of money in sinking a large shaft. It was abandoned May 1st.

Jacobs'.

This mine is the property of the Jacobs Coal Co. ; T. H. Williams, mine boss. I visited this mine March 29th and August 26th, finding it in a fair condition at both visits. The pillars are being drawn back, and the mine will soon be abandoned.

Brookfield

Is one of the most extensive basins of coal in the district, embracing the Cleveland shaft and the slope, from the mouth of the drift to the Cleveland shaft being above three miles. They are drawing back the pillars at present. I was informed by the superintendent and boss, John McIntosh, that in one part of the mine they had been drawing back pillars for five years. I think it will take years yet to take all the coal out. I visited this mine March 30th and August 27th, finding it in good condition, but at the latter date the Ramage entry was out of order. This entry is in the center of the large mine, and black damp was coming from the old works. I requested the boss to try to get a heavy force of air to play upon this entry. I tested the scales November 9th, finding them all right. On the 11th and 12th I examined the mine, finding it in splendid condition, with the exception of the Ramage entry, which was still troubled with black damp. The boss told me that on some days it was as clear here as in any other part of the mine. I told the miners they should

quit work at once whenever they thought it dangerous; being placed as it is there is little remedy for it. The mine is well managed, in general. Sharon Iron Co., owners. One hundred and seventeen men are employed.

Cambria,

In general, is a well ventilated mine, but the traveling way is not in very good condition, owing to falls caused by drawing back pillars and the changes of the weather, under which circumstances it is almost impossible to better it. Visits were made to the mine January 27th, June 3d and September 22d. On the two last occasions the mine was idle. Sampson, Walker & Co., proprietors; George Stanfield, superintendent; David Griffiths, mine boss. Eighty men are employed.

Marshall

Was visited January 27th and September 23d, being idle on both occasions. Very little work has been done this year. Tod, Wells & Co., owners; Wm. K. Davis, boss.

Scoville.

I visited this mine January 26th, May 31st and September 15th. It is the property of the Morris Coal Co.; D. D. Morris, superintendent; Thos. E. Thomas, mine boss. Fifty-four men employed. It is a well ventilated mine.

WAYNE COUNTY

Fox Lake.

I made two visits to this mine. It is now abandoned.

Fox Lake No. 2

Was visited five times this year. An air shaft has been sunk, and ladders placed in it. On two occasions I found an insufficiency of air, hence I requested the company to put up a fan, which was done. On September 5th, when I examined the fan and mine, I found that the break-throughs had been neglected, and that eighty men were suffering for lack of air. I ordered them to quit work at once, and not to start again until the air should be brought up according to law. November 15th the mine was idle. I again examined the mine, finding the break-throughs not yet repaired. I told David Naysmith, who had recently taken charge of the mine, that it was useless for the company to put up a fan and keep it in operation unless they put the break-throughs in good condition. Mr. Naysmith said he had not yet had time to repair them, which was true. I wrote to the superintendent, . B. Zerbe, concerning the state of the mine. He promised that the boss would begin immediately to repair it. Fox Lake Coal Co., owners. One hundred and fifty-five men employed.

Fox Lake No. 3

Is a new shaft in process of sinking.

Hametown

Was visited January 18th and April 22d. It is now worked out.

Ruth

Is a new shaft, the property of H. L. Lomas, D. V. Hoffman being superintendent. I visited it October 31st, finding that the entries were just starting from the foot of the shaft.

Dalton

Is owned by the Massillon & Newman Coal Co.; John Pollock, superintendent. It is a new mine in process of sinking.

LIST OF MINES IN OHIO EMPLOYING MORE THAN TEN MEN.

Name of mine.	Kind.	Name of owner or operator.	P. O. Address.
<i>Athens County.</i>			
Glen Eben.....	Slope.	Thomas Coal Co.....	Glen Eben.
Hamley Run.....	Shaft.	Hamley Run Coal Co.....	"
Carbondale, North..	Drift.	Carbondale Coal Co	Carbondale.
Carbondale, East	"	" "	"
Carbondale, West.....	"	" "	"
No. 21.....	"	Col. & Hocking Coal & Iron Co	Columbus.
No. 23.....	"	" "	"
No. 25.....	"	" "	"
No. 27.....	"	" "	"
Nickel Plate, or No. 31..	"	George E. Hall.....	Nelsonville.
Briar Hill.....	"	Royal Coal Mining Co.	Columbus.
Union.....	"	Union Coal Co.....	"
Happy Hollow.....	"	Nelsonville Coal & Coke Co..	"
No. 18.....	Shaft	Sunday Creek Coal Co.....	"
Floodwood.....	"	O. & Western Coal & Iron Co..	"
Jacksonville.....	"	W. P. Rend & Co	Chicago.
Republic.....	"	" "	"
Coe Hill.....	Drift.	Juniper Bros. & Lampman....	Nelsonville.
Poston's No. 1.....	"	C. L. Poston & Co	"
Poston's No. 2.....	"	" "	"
Maple Hill.....	"	Maple Hill Coal Co.....	"
Doan.....	"	Lama & Barber.....	"
Section 29.....	"	W. B. Brooks & Son.....	"
New 29.....	"	Wallace & Brooks.....	"
L. D.....	"	Lewis Steenrod... ..	"
New Pittsburgh.....	Slope.	New Pittsburgh Coal Co.....	"
Pickett's.....	Drift.	Pickett Coal Co.....	"
Excelsior	"	Woodward & Parker	"
West Floodwood.....	"	Hall & Ginetty.....	"
Minker Run.....	"	Slater & Jackson.....	"
Laurel Hill.....	"	Metcalf & Brewer.....	Lick Run.
King's.....	"	W. A. Foster.....	King's.
Skinner.....	"	Ogg & Cole.....	Big Run.
Broadwell.....	"	Federal Mining Co.....	Wakeup.
No. 1.....	"	Federal Valley Coal Co.....	Marietta.
No. 2.. ..	"	" "	"
Sedalia	"	Sedalia Coal Co.....	Glouster.
No. 16.....	Shaft.	Courtright, Kestler & Co.....	Hollister.
<i>Belmont County.</i>			
Wheeling Creek No. 1..	Drift.	Pitts. & Wheeling Coal Co....	Bridgeport.
Wheeling Creek No. 2..	"	" "	"
Pittsburgh	"	" "	"
Aetna	"	Aetna Mill Co.....	"
Standard.....	"	Standard Iron Co.....	"
McConaughey.....	"	Milt McConaughey.....	"
Nail Mill	"	Bellaire Nail Works.. ..	Bellaire.
Robinson's.....	"	Geo. O. Robinson.....	"
Bernard.	"	Wm. G. Bernard.....	"
Scheck's.....	"	R. Heslop & Co.....	"

LIST OF MINES EMPLOYING MORE THAN TEN MEN, ETC.—Continued.

Name of mine.	Kind.	Name of owner or operator.	P. O. Address.
<i>Belmont County.—Con.</i>			
Belmont No. 1.....	Drift.	Heatherington & Kelly.....	Bellaire.
Belmont No. 2.....	"	Belmont Coal Co.....	"
Pittsburgh.....	Slope.	Lewis Rockershausen.....	"
Sullivan.....	Drift.	Sullivan & Hines	"
Morgan.....	"	Bellaire Coal Co.....	"
Laughlin.....	"	Laughlin Nail Co.....	Wheeling, W. Va.
Burlington.....	"	W. J. Rainey	Don.
Flushing.....	"	Flushing Coal Co.	Elyria.
Wheeling Valley.....	"	J. B. Ramage.....	Bannock.
Rock Hill.	"	J. H. McClain.....	Massillon.
Captina.....	Shaft.	Captina Coal Co.....	Armstrong's Mills.
Kidd's No. 1.....	Drift.	John Kidd.....	Steel.
Kidd's No. 2	"	Kidd Bros	Kidd.
Franklin	"	Stewart & Meehan.....	Stewartsville.
Maple Hill.....	"	J. H. Dunham.....	Barton.
Bogg's.....	"	Wm. Boggs.....	St. Clairsville.
Troll..	"	C. Troll's Sons.....	"
<i>Columbiana County.</i>			
Farmers'.....	Drift.	Manufacturers' Coal Co.....	Cleveland.
Anderson	"	" "	"
New Shaft	Shaft.	Salineville Coal Co.....	"
Hays'.....	Drift.	James Strobly.	Salineville.
Slope.....	Slope.	Ohio & Pennsylvania Coal Co..	Cleveland.
Old Shaft.....	Shaft.	Shaft Coal Co.....	Salineville.
Empire.....	Drift.	S. S. Carnahan.....	"
Foster's.....	"	Columbiana Coal Co.....	"
Prospect Drift.....	"	Prospect Coal Co.....	East Palestine.
Prospect Slope	Slope.	"	"
Pleasant Valley No. 1...	Drift.	Southerin Coal Co.....	"
Pleasant Valley No. 2...	"	"	"
Pine Grove	"	Pine Grove Coal Co.....	"
State Line	"	State Line Coal Co.....	"
Washingtonville.....	"	Cherry Valley Iron Co.....	Leetonia.
Leetonia.....	Slope.	" "	"
Star.....	Shaft.	Holloway & Co....	Columbiana.
Coleman.....	Slope.	Albright Coal Co.....	Coleman.
Hollow.....	Drift.	Evans & Co.....	"
Quaker Valley.....	"	Summers Coal Co.....	Rogers.
Sheen	"	Jas. Sheen.	Salem.
Trotter's.....	"	Jas. Trotter.....	"
<i>Coshocton County.</i>			
Morgan Run.....	Drift.	Morgan Run Coal Co.....	Cleveland.
Franklin No. 1.....	"	Columbus Coal & Mining Co..	Columbus.
Franklin No. 2.....	"	" "	"
Rock Run.....	"	Royal Coal & Mining Co.....	"
Chestnut Hill.....	"	J. H. Robson	Coshocton.
Hay.....	"	W. G. Hay.....	"
Conley.....	"	John Conley.....	"
Flint Hill.....	"	Davis Bros.....	"
Cassingham.....	"	John Cassingham.....	"
Conesville No. 1.....	"	Davies & Co	Conesville.

LIST OF MINES EMPLOYING MORE THAN TEN MEN, ETC.—Continued.

Name of mine.	Kind.	Name of owner or operator.	P. O. Address.
<i>Coshocton County—Con.</i>			
Conesville No. 2.....	Drift.	Davis & Co	Conesville.
Hinckley	"	English Cannel Coal Co.....	Warsaw.
<i>Carroll County.</i>			
New Hazelton No. 1	Drift.	New York & Ohio Coal Co....	Cleveland.
New Hazelton No. 2.....	"	" " "	"
Russel Hill... ..	Shaft.	" " "	"
Osborne No. 1.....	Drift.	Osborne Coal Co	"
Bald Eagle.....	"	Franklin Coal Co	"
Fitz Allen.....	"	S. Allen's Sons	Dell Roy.
Orange No. 1.....	Slope.	Orange Coal & Iron Co	Sherrods-ville.
Hazelton No. 1	Drift.	Fuller, Davis & Co.....	"
Hazelton No. 2.....	"	" " "	"
Hazelton No. 3.....	"	" " "	"
<i>Guernsey County.</i>			
Briar Ridge No. 1	Drift.	Union Coal Co.....	Columbus.
Briar Ridge No. 2	"	"	"
Farmers'.....	Shaft.	Manufacturers' Coal Co	Cleveland.
Nicholson.....	Drift.	Ohio Coal Co ..	"
Scott's.....	"	Scott's Coal & Salt Co	Cambridge.
Cambridge.....	"	Cambridge Coal Co.....	"
Guernsey.. ..	"	M. D. & J. W. Robbins.....	"
Buffalo	Shaft.	Jas. E. Spaid.....	Buffalo.
Baltimore.....	"	Baltimore Coal Co.....	"
Norris	Slope.	Mrs. E. Norris	Danford.
Trail Run.....	Shaft.	Wheeling & Lake Erie Coal Co	Elyria.
<i>Gallia County.</i>			
Carl.....	Drift.	C. A. Carl	Cheshire.
Globe	"	Globe Coal Co	"
<i>Holmes County.</i>			
Myers	Drift.	Bowen Bros.....	Millersburg.
<i>Hocking County.</i>			
No. 1	Drift.	Col. & Hocking Coal & Iron Co.	Columbus.
No. 15.....	"	" " "	"
No. 17.....	"	" " "	"
No. 19, North.....	"	" " "	"
No. 19, West.....	"	" " "	"
No. 29.....	Slope.	" " "	"
Morris	"	Ellsworth & Morris Coal Co...	Cleveland.
Brush Fork No. 2	Drift.	" " "	"
Brush Fork No. 3	"	" " "	"
Consolidated	Drift.	Consolidated Coal Co.....	Cincinnati.
Snake Hollow	"	W. B. Brooks & Son	Nelsonville.
Thoroughfare ..	"	"	"
Black Diamond	"	Haydenville Mfg. Co	Haydenville.

LIST OF MINES EMPLOYING MORE THAN TEN MEN, ETC.—Continued.

Name of mine.	Kind.	Name of owner or operator.	P. O. Address.
<i>Hocking County—Con.</i>			
Orbiston.....	Drift.	O. & Western Coal & Iron Co..	Columbus.
Monday	"	" "	"
Kittanning	"	Raccoon Coal Co.....	Kittanning.
Summers	"	Summers Coal Co	Monday.
<i>Jackson County.</i>			
Central.....	Shaft.	Drew & Wasson Mining Co ...	Jackson.
Indiana	Slope.	" "	"
Star	Shaft.	Star Furnace Co	"
Globe	"	Globe Iron Co	"
Tropic.....	"	Tropic Iron Co.....	"
Hurd Slope	Slope.	Hurd Coal Co.....	"
Hurd Shaft	Shaft.	"	"
Keystone	Drift.	Benton & Roderick.....	"
Chapman	"	Chapman Coal Co	"
Grace	Shaft.	"	"
Springfield	Drift.	"	"
Kyle	Slope.	Kyle Coal Co	"
Eureka.....	Shaft.	Jacob A. Long & Co.....	"
Emma.....	"	Emma Coal Co.....	"
McKittrick	Slope.	McKittrick Bros	"
Standard	Shaft.	Standard Coal Co	"
Jones.....	"	Jones Coal Co.....	"
Newport	Drift.	Jas. Newport	"
Price	"	Price Bros.....	"
Benton	Slope.	V. H. Benton & Co.....	"
Worth	Drift.	"	"
Ada	Shaft.	Ada Coal Co.....	"
Forrest.....	Drift.	Jackson Hill Coal Co.....	"
Meadow Run.....	Shaft.	Willard Coal Co	"
Franklin	"	Franklin Coal Co.....	"
Ada.....	Drift.	Hall Coal Co.....	"
Barbour	"	Gosline & Barbour	Toledo.
No. 3.....	Slope.	Morgan & Jones.....	Coalton.
Hippel	Drift.	Hippel Coal Co	"
Darling No 1.....	"	John F. Hall.....	"
Darling No. 2	"	"	"
Darling No. 3	"	"	"
Kessinger.. ..	"	Kessinger & Co.....	"
Northern	Shaft.	Northern Coal Co	Glen Roy.
Tom Corwin	"	Tom Corwin Coal Co	"
Comet	"	Comet Coal Co.....	Wellston.
Wellston No. 1.....	"	Wellston Coal & Iron Co.....	"
Wellston No. 2.....	"	"	"
Wellston No. 3.....	"	"	"
Milton	"	Milton Furnace Co.....	"
Eliza	"	Eliza Iron Co	"
Fluhart No. 1.....	"	Theo. Fluhart & Co., Limited	"
Fluhart No. 2.....	"	"	"
Eclipse	Drift.	Jerry Morrow.....	Ennis.
Cameron	"	Lucy Coal & Mining Co	Dayton.
Garfield	"	Southern Ohio Coal Co	"
Patterson No. 1	"	"	"

LIST OF MINES EMPLOYING MORE THAN TEN MEN, ETC.—Continued.

Name of mine.	Kind.	Name of owner or operator.	P. O. Address.
<i>Jackson County—Con-</i>			
Patterson No. 3	Slope.	Southern Ohio Coal Co.....	Dayton.
No. 7.....	Drift.	“	“
<i>Jefferson County.</i>			
Walnut Hill.....	Drift.	Ohio & Penna. Coal Co.....	Cleveland.
High Shaft.....	Shaft.	Steubenville Coal & Mining Co	Steubenville.
Jefferson No. 1.....	“	Jefferson Iron Works.....	“
Bustard	“	Jefferson Coal Co	“
Diamond	Drift.	S. N. & W. G. McCullough.....	Linton.
Brilliant.....	Shaft.	Spaulding Iron Co	Brilliant.
Lagrange	Drift.	A. Gilchrist	“
Kelly	“	Kelly Coal & Coke Co.....	Portland Station.
Nebo.....	“	Yellow Creek Coal Co	Bargholz.
Strip Vein	“	Wallace, Barnfield & Co.....	Irendale.
Great Western	Shaft.	Great Western Fire Clay Co..	Toronto.
Forrest City	“	Jno. Franceys Sons & Co	“
<i>Lawrence County.</i>			
Belfont	Drift.	Belfont Nail Works	Iron-ton.
Old Mill.....	“	N. Y. & O. Iron & Steel Works.	“
Lawrence.....	“	Lawrence Iron & Steel Co.....	“
Kelly.....	“	Kelly Iron & Nail Co	“
New Castle	“	Means, Kyle & Co	Hanging Rock.
<i>Meigs County.</i>			
Minersville	Drift.	Minersville Coal Co	Minersville.
Antiquity	Shaft.	Ohio Coal Co.	Antiquity.
Peacock	Drift.	Peacock Coal Co	Pomeroy.
Dabney.....	“	Dabney Mining Co.....	“
Coal Ridge ..	“	Coal Ridge Salt Co.....	“
Charter Oak	“	Charter Oak Coal Co	“
Excelsior	“	Martin Ebersbeck	“
Nail Mill	“	Standard Nail & Iron Co	Middleport.
Williams	“	John E. Williams	Minersville.
Zahl	“	Zahl Salt Furnace Co	“
Syracuse.....	Shaft.	Syracuse Coal Co	Syracuse.
<i>Muskingum County.</i>			
Peacock	Drift.	Union Coal Co.....	Columbus.
Irish No. 1.....	“	Brush Creek Coal Co	“
Irish No. 2.....	“	“	“
Brush Creek	“	Col. & Brush Creek Coal Co ..	“
Chicago No. 1.....	“	Chicago & Columbus Coal Co..	Chicago.
Chicago No. 2.....	“	“	“
Qualey	“	Cannelville Coal & Iron Co ...	“
Greiner.. ..	“	H. L. Greiner	Zanesville.
L. Harper	“	L. Harper.....	“
E. Harper No. 1	“	E. Harper.....	“
E. Harper No. 2.....	“	“	“
Wheeler	“	Benjamin Wheeler.....	“
Seelover	“	Seelover Bros.....	“

LIST OF MINES EMPLOYING MORE THAN TEN MEN, ETC.—Continued.

Name of mine.	Kind.	Name of owner or operator.	P. O. Address.
<i>Muskingum County—Con</i>			
Locust Grove	Drift.	Jas. Owens	Zanesville.
Salt Run	"	McCutcheon & Frampton.....	"
Coal Hollow No. 1.....	"	W. H. Seelover	"
Coal Hollow No. 2.....	"	"	"
Harris.....	"	Churchill Coal Co.....	"
Lehigh	"	David Davis.....	Conesville.
Manley.....	"	Manley & Co.....	Dillon.
Ballou.....	"	Orrin Ballou.....	"
Neff.....	"	Neff, Sowders & Siler.....	Philo.
Garrett.....	"	J. Garrett.....	"
<i>Mahoning County.</i>			
Manning.....	Shaft.	Manning Coal Co ..	Youngstown.
Poland	"	Poland Coal Co.....	"
Austin ..	"	Tod, Wells & Co.....	"
National... ..	Drift.	Tod, Stambaugh & Co	"
Witch Hazel.....	Shaft.	Witch Hazel Coal Co.....	"
Beloit	"	Ziegler & Shaerer	"
Palmer	"	Andrews Bros.....	"
Brownlee	"	Evan, Morris & Sons	Girard.
Fairview	Drift.	Fairview Mining Co ..	Mineral Ridge.
Leadville	Shaft.	Raccoon Mining Co	"
Macherton	"	Williams Coal & Iron Co	"
Curfman.....	"	J. S. Curfman	Salem.
Ashman	"	Jas. Ashman ..	"
<i>Medina County.</i>			
Excelsior .....	.....	Excelsior Coal Co.....	Akron.
Dennison No. 2.....	Slope.	Dennison Coal Co.....	"
Sharon ..	"	O. S. Jacobs.....	"
Card	Shaft.	Card Coal Co.....	Cleveland.
Diamond No. 1.....	Slope:	W. B. Coleman.....	Wadsworth.
Dimond No. 2.....	"	"	"
Colliers.....	"	"	"
<i>Noble County.</i>			
Raccoon	Drift.	A. & D. M. Morrison.....	Fredericksdale.
<i>Portage County.</i>			
Black Diamond	Shaft.	P. L. Kimberly... ..	Sharon, Pa.
Scott	"	Scott Coal Co.....	Diamond.
Hutson.....	"	Hutson Coal Co.....	"
<i>Perry County</i>			
No. 3.....	haft.	W. P. Rend & Co	Chicago.
No. 5.....	"	"	"
No. 9.....	"	"	"
Chicago	Drift.	"	"
Shawnee.....	"	"	"
No. 3.....	"	Col. & Hocking Coal & Iron Co.	Columbus.

LIST OF MINES EMPLOYING MORE THAN TEN MEN, ETC.—Continued.

Name of mine.	Kind.	Name of owner or operator.	P. O. Address.
<i>Perry County—Con.</i>			
No. 5.. .. .	Drift.	Col. & Hocking Coal & Iron Co.	Columbus.
No. 7.. .. .	"	" "	"
No. 9.....	"	" "	"
No. 11.....	"	" "	"
No. 13.....	"	" "	"
No. 33.....	"	" "	"
No. 35.....	"	" "	"
No. 43.....	"	" "	"
No. 47	"	" "	"
No. 49.....	"	" "	"
Union No. 1	"	Union Coal Co.....	"
Union No. 2	"	"	"
Union No. 3	"	"	"
Union No. 4	"	"	"
Walnut Hill No. 3.....	"	Sunday Creek Coal Co.....	"
Clay Bank No. 2	"	"	"
No. 7.....	Shaft.	"	"
No. 8.....	"	"	"
No. 13.....	"	"	"
No. 19.....	"	"	"
No. 21.....	"	"	"
Redfield No. 1.. .. .	Drift.	Buckeye Creek Coal & Iron Co.	"
Redfield No. 2.....	"	" "	"
Redfield No. 3.....	"	" "	"
XX Shipping Bank.....	"	Ohio & Western C. & I. Co....	"
XX Furnace Bank	"	"	"
Furnace No. 1	"	New York & Perry C. & I. Co.	Shawnee.
Furnace No. 2	"	"	"
Furnace No. 3	"	"	"
Upson No. 1	"	Upson Coal Co.....	"
Upson No. 2	"	"	"
Dickson.....	"	J. C. Hamilton... ..	"
Shawnee Valley.....	"	Shawnee Coal & Iron Co.....	Newark.
Fanny Furnace.....	"	"	"
Black Diamond.....	"	Ohio Coal Co.....	Straitsville.
Co-operative.....	"	Straitsville Co-operative C. Co	"
Black Hill	"	Bailey & Soegard.....	Maholm.
Dougherty.....	"	Daugherty & Oo.....	"
O. K.....	"	W. D. Clark.....	"
Maholm	"	Forquer & Moore	"
Beech Grove No. 2.....	"	J. H. Jones.....	McLuney.
Horn, or No. 1	"	M. & P. Tague.....	"
Block, or No. 2... ..	"	O'Niel & Tague.. ..	"
Furnace No. 1.....	"	Gosline & Barbour.....	Toledo.
Furnace No. 2.. .. .	"	"	"
Funnel Hill.....	"	J. E. Davis.....	New Lexington.
Nugent Drift.....	"	Wales, Collet & Hammond....	"
Nugent Slope	Slope.	"	"
Brilliant.....	Drift.	Crawford & Gave.....	McCuneville.
Ferara.....	"	Geo. Butler Mining Co.....	Clay Bank.
Lyonsdale.	"	Meenan & McNulty.....	Lyonsdale.
Block Vein	"	David Davis & Son.....	Redfield.
Chestnut Grove.....	"	Jas. Coyle & Son.....	"
Simons	"	A. P. Simons... ..	"
Wallace No. 1.....	"	Wallace Coal Co.....	"

LIST OF MINES EMPLOYING MORE THAN TEN MEN, ETC.—Continued.

Name of mine.	Kind.	Name of owner or operator.	P. O. Address.
<i>Perry County—Con.</i>			
Wallace No. 2.....	Drift.	Wallace Coal Co.....	Redfield.
Crescent.....	"	Roseville Mining Co.....	Roseville.
<i>Summit County.</i>			
Lake View No. 1.....	Shaft.	Lake View Coal Co.....	Akron.
Lake View No. 2	"	"	"
Burnett.....	Slope.	Brewster Coal Co	"
Summit.....	"	Summit Bank Coal Co.....	"
Thomas.....	Drift.	H. Thomas & Co.....	Cuyahoga Falls.
<i>Stark County.</i>			
Wade.	Drift.	Wade Coal Co	Cleveland.
Evansdale.....	"	Valley Coal Co.....	"
Chestnut Grove	"	McLinden Coal Co.....	Canton.
Hadley No. 1.....	"	Cooke & Hadley Coal Co.....	"
Hadley No. 2.....	"	"	"
Hadley No. 3	"	"	"
Elm Run.....	Shaft.	Elm Run Coal Co.....	Massillon.
Beaver Run..	"	Beaver Run Coal Co..	"
Camp.....	"	Howells Coal Co.....	"
Anderson.....	"	"	"
Willow Spring, East....	Drift.	Ridgway, Burton & Co.....	"
Willow Spring, West....	"	"	"
Lawrence.....	Shaft.	"	"
Hern Brook.....	"	"	"
Cleveland	Slope.	West Massillon Coal Co.....	"
West Massillon No. 2....	Shaft.	"	"
Youngstown.....	Slope.	Youngstown Coal Co.....	"
Pigeon Run.....	Shaft.	Pigeon Run Coal Co.....	"
Camp Creek.....	"	O. Young Coal Co.....	Elyria
Minglewood.....	Slope.	Jas. Mullin & Sons	Wooster.
Fox Run.....	Drift.	Bowman Coal Co.....	North Industry.
Greentown.....	"	Smith & Borst.....	Greentown.
Alliance	Shaft.	Alliance Block Coal Co	Alliance.
Osnaburgh.....	Drift.	Osnaburgh Coal Co.....	Osnaburgh.
Brush Hill.....	"	Selway & McFarlan.....	Chapman.
<i>Tuscarawas County.</i>			
Prospect.....	Drift.	Turner Coal Co.....	Cleveland.
Pike Run No. 1.....	"	Tuscarawas Valley Coal Co..	"
Somerdale No. 1.....	"	J. H. Somers.....	"
Somerdale No. 2.....	"	"	"
Barnheizel	"	David Barnheizel.....	"
Lockard No. 1.....	"	Excelsior Coal Co.....	Akron.
Lockard No. 2	"	"	"
South Side.....	"	C. E. Holden	Mineral Point.
Davis.....	"	Davis Coal Co.....	"
Peacock	"	Barkheimer & Gordon.....	"
Pioneer..	"	Ridgway, Burton & Co.....	Massillon.
Goshen.....	"	Goshen Coal Co.....	New Philadelphia.
Goshen Run.....	"	W. R. Jones	"
Eagle Hill.....	"	"	"

LIST OF MINES EMPLOYING MORE THAN TEN MEN, ETC.—Continued.

Name of mine.	Kind.	Name of owner or operator.	P. O. Address.
<i>Tuscarawas County—Con</i>			
Stone Creek.....	Drift.	H. S. Odbert.....	New Philadelphia.
Walton Ridge.....	"	C. J. Nungesser	"
Matthias.....	"	Crites & McClean.....	"
Rennie's.....	"	W. R. Rennie.....	"
Brock Hill.....	"	Brock Hill Coal Co.....	Elyria.
Mount Carbon.....	"	C. P. Minich.....	Tuscarawas.
Mineral Ridge	"	Nicholas Hert.....	"
Monarch.....	"	Monarch Coal Co.....	Dennison.
<i>Trumbull County.</i>			
Tod	Shaft.	Sampson, Walker & Co.....	Girard.
Peacock.....	Slope.	"	"
Scoville.....	Shaft.	Morris Coal Co.....	"
Stewart.....	"	"	"
Hason	"	"	"
Paris	Slope.	Paris Coal Co.....	Youngstown.
Marshall.....	"	Osborne Coal Co.....	"
Jacobs'.....	Shaft.	P. S. Jacobs & Sons.....	"
Garfield.....	"	Garfield Coal Co	"
John Henry.....	"	Baldwin & Williams.....	Mineral Ridge.
Prevost.....	Slope.	E. Nicholas & Co.....	"
Brookfield.....	Drift.	Sharon Iron & Coal Co.....	Sharon, Pa.
Keel Ridge.....	"	Kimberly, Dunham & William- son	"
Powers.....	Slope.	Sampson, Guy & Co.....	Churchill.
<i>Vinton County.</i>			
Elk.....	Shaft.	Madina Coal Co.....	Chillicothe.
No. 4.....	Drift.	Zaleski Co.....	Zaleski.
No 6.....	"	"	"
Inghams	"	N. P. McDermott & Bro..	King's.
Hawk's.....	"	Oscar L. Hawk.....	Hawk's.
Raccoon	"	Jno L. Lawler.....	Minerton.
<i>Wayne County.</i>			
Fox Lake No. 2.....	Shaft.	Fox Lake Coal Co.....	Cleveland.
Ruth	"	H. E. Loomis ..	Akron.
<i>Washington County.</i>			
Sycamore.....	Slope.	Hardin & Kever.....	Coal Run.

TWELFTH ANNUAL REPORT
OF THE
OHIO FISH COMMISSION,
TO THE
GOVERNOR OF THE STATE OF OHIO.
FOR THE YEAR ENDING DECEMBER 31, 1887.

To His Excellency, J. B. FORAKER, Governor of Ohio:

SIR: I have the honor to transmit herewith the Annual Report of the Ohio Fish and Game Commission for the year ending December 31, 1887.

C. V. OSBORN,
President Ohio Fish and Game Commission.

January 16, 1888.

ANNUAL REPORT.

HON. J. B. FORAKER, *Governor of the
State of Ohio, Columbus, Ohio:*

DEAR SIR: In making this, our annual report, we are happy in the fact that we have results and general commendation in the increase of fish and game. We append letters from the large houses engaged in Lake Erie fishing, which show that the increase in the lake is now more than paying the whole expense of this Commission. From many carp culturists we have very flattering letters. Reports from the sportsmen and wardens show that fish and game are much more plentiful in all parts of the State than last year. This is largely, if not entirely, the work of the faithful wardens attending to their duty without compensation. We earnestly hope that some arrangement may be made in legislation by which these men may secure from their respective counties a sufficient sum to pay them for their time and labor. In many counties these officers have spent much time and expended more money than received in fees. The State should not ask of its citizens such sacrifice. There is in the fish and game fund in many of the counties sufficient money to pay the wardens a sum great enough to balance their expenses. And as this money has accumulated through their faithfulness, it should be allowed to their use.

In parts of the State the duties of the warden are so arduous we cannot secure men for the office, or those who will give it their attention and care, there being ten less officers now than when we made our last report. And should there be no plan for their pay matured at this present Legislature, we fear that the wardens now in office will become discouraged and retire from the field. We again recommend the appointment of a Warden for the State, feeling assured that this officer will much improve the efficiency of the local wardens, and that the result will show a saving of money. Many calls are made upon the Commission for special work, as, getting evidence in places and cases in which the County Warden can not or does not make success, and the detective talent is more expensive, and will not accomplish so much as one trained by experience for this special work. The 56 wardens reporting this year show good observance of the law in 56

counties. Great improvement in all counties ; not good in one county. Arrests made, 190; convictions, 86; carried up to court, 34; fines assessed, \$862; nets and seines confiscated, 20.

The work of propagation in all branches but one was successful. The fifty millions of white-fish in the Sandusky hatchery were turned into the lake in first-rate condition, and the jars are now filled with nearly one hundred millions of spawn. We transported from Cohoes, on the Hudson, one million of eel fry, and these fish, which at the time of their arrival in June or July were about three inches in length, are now reported to have grown to 12 or 15 inches. The reports from them from all parties are very good. The jack-salmon did not prosper as well as we hoped, but make a good showing for the money expended. Our one failure was in the brook-trout venture. We purchased from Mr. C. F. Holt fifty thousand fry, at a cost of \$125, and desiring to make an assured success of the first venture, we thought it advisable to carry them through the summer, and put them for this purpose in the ponds of S. B. Smith, in Logan county, Ohio. The very dry summer reduced the supply of water for the ponds, so the fish began to die; and in order to save the fish Mr. Smith cut the bank and turned the fish into Mud River. They are not lost, but we cannot deliver them to parties wanting them. There were in these ponds a number of grown trout, belonging to Mr. Smith; these were also turned loose, and this fall were seen spawning in the branches at the head of the river. We are convinced that there are many brooks in the State capable of producing and supporting this fish in abundance, and recommend a law protecting them entirely for a number of years.

FINANCIAL REPORT.

PROPAGATION.

Amount on hand January 1, 1887.....	\$4,442 12
Appropriation for 1887.....	6,000 00
Total..	<u>\$10,442 12</u>

EXPENDITURES.

Salary of Superintendent 11 months..	\$1,100 00	
Salary of assistants.....	782 48	
Labor.....	181 75	
Expense of hatchery.....	105 18	
Printing.....	70 30	
Postage	44 12	
Telegraph ..	23 39	
Insurance	40 00	
Interest	13 00	
Chase jars	150 00	
Water-works	600 00	
Carp.....	101 85	
Eels	490 10	
Jack-salmon.....	384 19	
White-fish	227 40	
Trout	125 00	
Expense of Commission.....	302 47	
	<u> </u>	\$4,748 23
Balance unexpended.....		<u><u>\$5,693 89</u></u>

PROPAGATION FUND.

Balance on hand January 1, 1887.....	\$933 63
Appropriation for 1887.....	3,000 00
Total	<u>\$3,933 63</u>

EXPENDITURES.

Printing	\$137 25
Postage.....	9 50
Telegraph	7 65
Special detective and traveling.....	137 44
Justices' fees	181 50

Lawyers' fees	30 00	
Wardens' expense.....	277 60	
Boats and labor on Lake Erie.....	74 70	
Legal fees and costs, Lake Erie.....	425 15	
	<hr/>	\$1,280 79
Balance unexpended November 15, 1887.....		<hr/> \$2,652 84

C. V. OSBORN,
JOHN H. LAW,
JOHN HOFER,
A. C. WILLIAMS,
E. D. POTTER.

SUPERINTENDENT'S REPORT.

To the Honorable, the Board of Ohio Fish and Game Commission :

I herewith submit this, my fourth annual report. At the time I made my report one year ago, there were fifty million white-fish spawn in the hatcheries, which were hatched with more than usual success, coming out of the jars well matured, and strong and vigorous, about the middle of March. They were deposited on the reefs about the islands of Lake Erie, the native spawning grounds of the white-fish. My next endeavor was to fill the hatchery at Sandusky with the fry of the lake pickerel, with which to stock the inland streams. The season, however, was very unfavorable, and in consequence I succeeded in getting only about three million fry, which were successfully hatched and deposited in streams throughout the State. The pickerel spawn early in the spring; the eggs are of a glutinous character, making it impossible to separate them. It requires about twenty days for hatching, and the work of distributing should begin at once, as the young fish, before they are a week old, will begin devouring each other. This fact necessitates immediate distribution, and with the least possible delays, that the fish may reach the food they require in the streams that are to be their future homes.

In the month of June, 1887, I visited Troy, N. Y., and obtained from the Hudson River nearly one million silver eel, which were received in fine condition at the Sandusky hatchery, and were successfully distributed throughout the State, nearly fifty different streams and reservoirs receiving deposits. All this was accomplished at a very slight expense to the State, and I would earnestly recommend that supplies of these eel be obtained in future for our inland streams and reservoirs.

The Commission did not renew the lease for the carp pond at Milan, and hence for the past year that pond has not been under my control or supervision. But the demand for carp from parties residing in the interior, and from many different quarters was so great that I bought of Mr. Geo. Roberts, owner of the pond, on the order of the Board, one hundred thousand young carp in October last, having drained the pond for the purpose. They were an exceptionally healthy lot, not so large as are sometimes obtained, but vigorous, and were distributed in good condition in liberal quantities to all parties applying for them. All orders to date have been filled, thirty-two thousand six hundred and five having so far been sent out. The balance are in the Sandusky hatchery, in prime condition, and will be distributed as fast as applications are received.

The outlook for the work of the coming season is encouraging. The United States Fish Commission having abandoned the island waters for spawn for the past season, at least, I was enabled to obtain in November the largest and best supply of white-fish spawn, at the least expense, I have ever secured. I succeeded in putting into the hatchery one hundred million eggs, filling the entire 420 jars with as fine a lot of eggs as were ever seen. I anticipate a total output of not less than

eighty million fry in the spring. The number would be larger had the early winter been colder and the maturing of the spawn been retarded.

It has been my aim to economize, in the expenses of my department, as much as was consistent with the good work of the hatchery and the interests of the people of the State at large in this industry. I congratulate the Board on the fact that the results of past labors are now fully apparent in an increased supply of game and food fish in the interior streams and reservoirs of the State, and also of the most important and most valuable food fish of the lake waters. The letters I herewith send furnish abundant and most gratifying proof of this fact.

Respectfully submitted.

HENRY DOUGLASS,
Superintendent.

Sandusky, Ohio, January 7, 1888.

NAMES OF PARTIES TO WHOM CARP HAS BEEN SENT.

Names.	Towns.	Counties.	Ponds.	No.
E. M. Stanbery.....	McConnelsville ...	Morgan .....	.....	1,000
W. W. Cardwell.....	Vinton	Gallia	1	40
John Johnson.....	Jackson	Jackson	1	40
John W. Slater.....	Sonora	Muskingum..	1	40
W. Langhorst.....	New Bremen....	"	1	40
John H. Fimple.....	Carrollton.....	Carroll	1	40
Isaac Sayer.....	Pomeroy	Meigs	1	40
D. Ware..	Piketon	Pike	1	40
Allen Ramsey.....	Powhatan	Belmont	1	40
A. J. Sumbo.....	Ironton	Lawrence ...	1	40
D. H. Frent	Wheelersburg	Scioto	1	40
" neighbor.....	"	"	1	40
"	"	"	1	40
S. W. Stockdale.....	Cambridge	Guernsey ...	1	40
Marion Reed.....	Hawk's Station ...	Vinton	1	40
James Hartley.. ..	"	"	1	40
James E. Goddard.....	Dawkin's Mills ...	Jackson	1	40
Robert Fitzpatrick.....	"	"	1	40
J. M. L. McNiel.....	Kirkwood	Shelby	1	50
E. W. Woodiss.....	Weston ...	Wood	1	50
John Beverstock.....	"	"	1	50
William Humphrey.....	Oak Harbor.....	Ottawa	1	50
John Geyer.....	Tiffin	"	1	50
Fred. Durkee.....	Conneaut	Ashtabula ...	1	50
M. C. Durkee.....	"	"	1	50
James M. Morgan.....	West Liberty.....	Logan	1	50
Samuel Metz.....	"	"	1	50
J. C. Throp, returned.....	Warren	Trumbull....	1	50
Samuel Dibert.....	Urbana	Champaign..	1	50
M. Preston.....	Kenton ..	Hardin.....	1	50
William M. Link.....	Columbus	Franklin	1	50
Wm. Henderson.....	Urbana	Champaign..	1	50
Rufus Beach.....	Barlow	Vinton	1	50
Mahlon S. Green... ..	Locust Point.....	Ottawa ..	1	50
Robert Fitz Patrick.....	Wellston	Jackson	1	40
Charles Fitz Patrick.....	"	"	1	40
Ebenezer Pyle.....	Chandlersville....	Muskingum..	1	40
A. H. Vernon.....	Berlin X Rodes...	Jackson	1	40
David Perkins.....	"	"	1	40
C. P. Engalls.....	Huntsville	Logan	5 cans.....	5,000
Conrad Bechtel.....	Sandusky	Erie.....	1	40
C. V. Osborn.....	Dayton	Montgomery	5 cans.....	5,000
Willis Sells.....	Hilliards	Franklin	1	40
W. M. Barra.....	McConnelsville ...	Morgan	1	40
William Dieht.....	Woodsfield	Monroe	1	40
W. A. Long.....	Hawk's Station ...	Vinton ..	1	40
Samuel Reed.....	" ..	"	1	40
Lemuel Reed.....	Radcliff	"	1	40
H. E. Reed.....	"	"	1	40
A. C. Williams, returned..	Chagrin Falls.....	Cuyahoga ...	5 cans.....	5,000
Loudenslager & Sites.. ..	Newark	Licking	2 cans.....	3,000
Sam. Parr.....	"	"	2 cans.....	3,000
J. R. Gooding.....	Richwood	Union.....	1	40
Moses Linesay.....	Jackson	Jackson	1	40
Elisha S. Curlock.....	"	"	1	40
Michael Maloney.....	Wauseon	Fulton	1	40
Jerry Hunter.....	Wellston	Jackson	1	40
Frank Ulsaner.....	Gallipolis	Gallia	1	40
Wm. T. Kyle.....	Prospect	Marion.....	1	40
Warren G. Miller.....	Radcliff Station..	Vinton	1	50

NAMES OF PARTIES TO WHOM CARP HAS BEEN SENT—Continued.

Names.	Towns.	Counties.	Ponds.	No.
Jacob G. Miller.....	Radcliff Station...	Vinton.....	1	50
Elmer H. Fletcher.....	"	"	1	50
W. H. Treton.....	Crosstown.....	Brown	1	50
Warren C. Leffel.....	Springfield	Clarke	4 cans.....	5,000
James Akin.....	Houston	Shelby	1 can.....	1,000
C. V. Osborn	Dayton.....	Montgomery	1 can.....	1,000
Louis Ahlborn.....	Patriot	Gallia	1	50
Volney Crocker.....	Edgerton	Williams....	1	50
Toney Frazer..	West Toledo.....	Lucas	1	50
C. L. Pittenger.....	Wellston	Jackson	1	50
Robert Treton.....	Crosstown..	Brown	1	50
E. M. Caney.....	Hillsboro	Highland ...	1	50
A. T. Cunningham.....	"	"	1	50
Louis Long	Wilksville.....	Vinton.....	1	50
R. W. Long	"	"	1	50
Picket Clark.....	Rocky Hill.....	Jackson	1	50
Louis Ahlborn.....	Patriot	Gallia	1	50
George Fisher.....	Columbus	Franklin	1	50
Peter Martin.....	Salina.....	Athens.....	1	50
Henry Marton.....	"	"	1	50
William Hess.....	Polk	Ashland	1	100
B. W. Terrell.....	Lynchburg	Highland ...	2	100
J. H. Ulrick	Springfield	Clarke	1	75
S. M. Hartman.....	Van Buren.....	Hancock	1	50
Wm. Smart.....	Botkins	Shelby	1	50
Wm. Schasher.....	Sandusky	Erie	1	50
George P. Tyler.....	Georgetown	Brown	Private.....	125
J. P. Hebling.....	"	"	"	90
Newton Baird.....	"	"	"	30
D. C. Harbaugh.....	"	"	"	30
James Barr.....	"	"	"	30
P. H. Greago.....	"	"	"	25
John A. Jennings.....	"	"	"	30
Y. D. Sanders.....	"	"	"	30
Albert Kuntz	"	"	"	30
John M. Markley.....	"	"	"	30
William Smith.....	"	"	"	30
J. C. Hebling.....	"	"	"	30
Allen Ramsey.....	Powhatan	Belmont	"	30
F. H. McCullough.....	Avondale	Coshocton ...	"	30
J. D. Cooper.....	Coshocton.....	"	"	30
James E. McKeever.....	Williamsburgh ..	Clermont.....	Public	800
James Halman.....	"	"	Private.....	30
William Halman.....	"	"	"	30
Penn Halman.....	"	"	"	30
Henry Price.....	"	"	"	30
Wesley Smith.....	"	"	"	30
Park Comm'rs, City Hall..	Cleveland	Cuyahoga ...	Public.....	250
J. J. Stranahan	Chagrin Falls.....	"	"	200
A. C. Williams.....	"	"	"	500
George Baker.....	Greensville	Darke	"	150
A. T. Breshbill.....	Defiance	Defiance	Private.....	30
N. B. Butler.....	Lancaster	Fairfield	"	30
Jessie Allen.....	Washington C. H.	Fayette	Public.....	225
A. F. Linton.....	Columbus	Franklin	Private.....	60
A. E. Davis.....	"	"	"	30
Mr. Lenard.....	Birmingham.....	Erie	"	30
C. W. Sadler.....	Sandusky	"	Public.....	1,000
Henry Curtess..	"	"	"	850
J. S. Conners	Cumberland.....	Guernsey ...	Private.....	50

NAMES OF PARTIES TO WHOM CARP HAS BEEN SENT—Concluded.

Names.	Towns.	Counties.	Ponds.	No.
W. F. Heyman.....	Monroeville	Huron	Private.....	25
John Vonstein.....	Jeneva	Hancock	"	25
D. H. Gunter.....	Malinta	Henry	"	30
David Geick.....	"	"	"	30
James Daugherty.....	"	"	"	25
John Brickman.....	Napoleon.....	"	"	30
Frank Woodward.....	"	"	"	30
James Ewing.....	Silver Creek.....	Hardin.....	"	25
H. C. Groschner.....	Napoleon	Henry	Public.....	250
J. M. Ridemous.....	Winona Furnace..	Hocking.....	"	25
Fred. Waymack.....	Hepburn	Hardin.....	"	25
Fred. W. Shroeder.....	Leipsic	Putnam	1	25
H. P. Engalls	Huntsville	Logan.....	Public water.....	1,200
Samuel Ward	Bellefontaine.....	"	Private.....	50
D. S. Alexander.....	Akron	Summit	"	100
W. H. Bundage.....	McCutchenville ..	Wyandot.....	.....	40
John Kimble.....	Adrian	Seneca .....	.....	25
William Nogle.....	Republic .....	" .....	.....	25
John Feybarger.....	Cazeldale.....	Warren .....	.....	100
Charles Chandlers.....	Malta	Morgan .....	.....	25
Robert W. Griest.....	" .....	" .....	.....	30
L. S. Holcomd.....	Pennsville.....	" .....	.....	30
William Wilbor.....	Ehart	Medina .....	.....	25
F. M. Camp.....	Spencer .....	" .....	.....	30
Jacob Slates.....	" .....	" .....	.....	30
A. S. Kinnaman.....	" .....	" .....	.....	30
John E. Fotch.....	" .....	" .....	.....	30
Charles Camp.....	" .....	" .....	.....	30
H. B. Camp.....	" .....	" .....	.....	30
P. Williams.....	" .....	" .....	.....	30
Abner Scott.....	Conneaut	Ashtabula...	.....	25
William F. Hartman.....	Orangeville.....	Trumbull ..	.....	25
J. S. La From	Clyde	Sandusky ..	.....	100
W. H. Kramer.....	Marion .....	" .....	.....	25
John Cowell.....	Venice	Erie.....	.....	30
Clifford Thomas..	Ehart	Medina .....	.....	30
J. B. Carlton.....	York .....	" .....	.....	30
J. S. Scott.....	Zanesville.....	Muskingum ..	.....	30
William Prince.....	St. Paris.....	Champaign..	.....	60
M. Hart.....	Caledonia	Marion.....	.....	400
M. R. Payne.....	Marion .....	" .....	.....	25
D. M. Christman.....	" .....	" .....	.....	25
James McNealan..	West Union	Adams .....	.....	25

CARP CULTURE.

In answer to a circular making inquiry as to carp culture, the following was received :

Number of carp ponds reported.....	377
These ponds were stocked with.....	2,908 carp.
Number of carp sold from ponds.....	2,175
Number of carp on hand.....	1,967,500

Of those who reported the edible qualities of carp, 25 reported *good* ; 4 reported *fair*, and 2 reported *bad*.

As to the abundance of carp in the rivers and streams, 9 reported *plenty*, 8 reported a *few*, and 4 reported *none*.

The following report was received from A. P. Ashworth, Pomeroy, Meigs county, Ohio :

Stocked my pond in 1884 with 25 scale and mirror carp. Pond contains one-third acre, and is from 1 to 4 feet deep. Drained the pond twice a year. Temperature, 65° Fahrenheit. Pond contains lilies and wild-rice. Shorts baked in loaves, fed twice a day, the principal food. Number of carp on hand, *millions* ; they spawned at the age of 2 years, and have produced millions; have sold 20,000. The carp weigh from nothing to 15 pounds. In catching them I use a seine. Have eaten carp at all times of the year, and call them good. The greatest difficulty experienced in my culture is, to keep them from spawning and increasing too rapidly, and the expense of feeding them. As to the abundance of fish in the streams, I think there are but few.

The following report was received from Mr. L. D. Berry, Georgetown, Ohio :

In 1883 I received 20 carp. My pond contains one acre, and is about 10 feet deep, and has mud bottom ; have never drained it. Very little water flows through it. Pond-lilies and water-cress grow in and around the pond. The carp are fed once a day, on corn-bread, crackers, cabbage, etc. The pond contains thousands. They spawned at two years of age. I have some five years old that weigh 20 pounds ; four years old, 10 pounds, and some two years old that weigh 5 pounds. When I catch them I use a hook baited with grasshoppers, worms, cheese and crickets. I have experienced no difficulty as yet. A few large carp have been caught in our streams. We pay from 10 to 12 cents a pound for fish. I read the National Journal Carp Culture. I am greatly pleased with my five ponds ; they are a source of much pleasure and profit.

The above reports are similar to all the rest. Quite a number of new ponds have been built during the last year, and many more will be built the coming season. There are many places especially adapted to carp culture, where there are springs of living water, and where an unsightly boggy brush-patch could, with a little work and expense, be changed to a beautiful carp pond and become one of the best paying parts of the farm.

APPENDIX A.

LETTERS FROM CITIZENS OF OHIO WHO HAVE RECEIVED CARP FOR PLANTING FROM THE OHIO FISH COMMISSION.

EDGERTON, O., *November 16, 1887.*

The fish came in good shape, and in good order.

Yours truly,

VOLNEY CROCKER.

VERSAILLES, O., *March 7, 1887.*

Fish doing well; did not lose any during the winter. Will have three more ponds ready this spring for spring delivery, if you can spare them. I bought 12 spawners from Alf Bascom, Steuben, Ohio, last fall, and 500 minnows. Am going in strong. Have good places.

Reply and oblige,

W. H. TODD.

JASPER, O., *October 28, 1887.*

Henry Douglass, Sandusky, O.—

SIR: I received the 40 German carp, all alive, and I now have them in the pond. What must they be fed? What attention do they need? When will they spawn? Enclosed please find stamp for reply.

Kindly yours,

D. WARE.

MANSFIELD, O., *June 10, 1887.*

Henry Douglass, Esq.—

DEAR SIR: The eels arrived all right, and were in fine order. None were dead. We put them in the lake the same day. With many thanks, I remain,

Yours fraternally,

L. P. PFUNDER.

NEWTON FALLS, O., *May 12, 1887.*

MR. DOUGLASS—SIR: Your agent came yesterday with the young jack-salmon. They were put in West Mahoning River. I wish to say that the black-bass put in two years ago are doing finely. We have caught some that weighed 20 ounces. Are you handling them this year? Can you send us eel? There are some in the East branch which we put in at Alliance, Ohio, a few years ago. They are catching some at Garrettsville that were put in Silver Creek four or five years ago, the largest of which weighed 3½ pounds.

Respectfully yours,

L. A. DOOLITTLE.

COLUMBUS, O., *June 16, 1887.**Henry Douglass, Sandusky, Ohio—*

DEAR SIR: We received the eels in good shape, and planted them in the streams, distributing them as we thought best. Of the portion of them that I personally attended to, there were not a single dead one, and I have heard from one lot sent to the Darby, and they were all alive. I shall hear from the others this morning, but they were in good shape when they left here. We need bass in this part of the State more than any other. We have been making a strong effort to protect our streams, and have been very successful in stopping illegal fishing. Our streams are natural bass waters, and with the fish that are left, if we could obtain some from the State we might in a short time have our waters well stocked.

Thanking you for your kind remembrance of us in this case, and trusting that when we get a supply of bass we may get our share, I remain,

Yours respectfully,

GEO. L. GRAHAM.

PORTSMOUTH, O., *June 6, 1887.**Mr. Douglass, Sandusky, Ohio—*

DEAR SIR: The 27,000 eels in charge of Mr. Hudson reached here in good condition; only two dead. We gave Mr. Geo. C. Cole one box of 3,000 to put in canal basin; the others we put in deep water, in Brush Creek. Two places they seemed able to look out for themselves. Geo. B. Cole and Allen Givens have fish ponds, and would like to have some German carp ready for distribution this fall. By notifying me or Mr. Sanford we will have the parties here to receive them. We hope to receive some strawberry bass this fall. Mr. Hofer wrote me that he would have some for distribution this fall. The salmon and eel were put in Scioto Brush Creek, for the reason that we have that stream under control, having stopped all the unlawful fishing. We hope to stop it in all the waters of the county.

Yours respectfully,

CHAS. BARTON.

LOUDONVILLE, O., *July 1, 1887.**Mr. Douglass, Sandusky, O.—*

DEAR SIR: Your Mr. Willis has just been here and delivered 2,500 silver eel in excellent condition, and I have put them in the Black fork of Mohican River. Some were put near town, and the rest in Taylor's dam, a mile or more up the stream. I am very much obliged, and will write you more fully.

Yours, etc.,

A. J. SCOTT.

CELINA, O., *June 25, 1887.**Mr. Douglass, Sandusky, O.—*

DEAR SIR: I received your telegram and complied with your orders, and put the eels in Celina Reservoir, and found them in very fair condition. Some few were dead.

Yours respectfully,

A. J. KNOX.

LANCASTER, O., *June 19, 1887.**Mr. Douglass, Sandusky, O.—*

DEAR I received the eels and put them in the Hocking River, canal reservoir and other streams. Could you send me some more? Some of our people would like to get some.

W. A. SCHULTZ.

CUMBERLAND, O., *April 1, 1887.**Mr. Douglass, Sandusky, O.—*

DEAR SIR: The fish you sent me came all right. Thanks for your promptness and liberality.

Yours truly,

J. S. CONNER.

WARREN, O., *April 19, 1887.**Mr. H. Douglass, Sandusky, O.—*

DEAR SIR: Can you send us some more black-bass with which to stock the Mahoning River? Those which you sent last year are doing nicely, notwithstanding Mr. Stranahan's statement to the contrary that they would do no good in running water. Please mail me pamphlet.

Yours respectfully,

JULES VANTROT, JR.

NEWARK, O., *July 27, 1887.**Mr. Henry Douglass, Sandusky, O.—*

SIR: You will please excuse me for not acknowledging receipt of eel before; but I have been busy, and it slipped my memory when I would have had time to attend to it. The eels arrived all right, and were put in Licking River, with the loss of only six. Thanks for favors.

Yours truly,

FRANK GILLMAN.

LOGAN, O., *June 23, 1887.**Henry Douglass, Esq., Sandusky, O.—*

DEAR SIR: I received eels on the 28th, and put 6,000 in the four-mile slack-water, 6,000 in Hocking River, and 6,000 in Scott's. They were in excellent shape. The first 9,000 had a few dead ones, and the second lot only had 9 dead ones. This shows that you understand your business, and have things down fine. What shall I do with the boxes? I got no instructions from the man on the train. When fish are ready for the Hocking county waters, wire me and I will be at the depot to receive them. I could have given one-half of them away to parties having private ponds, but I did not spare any. I have the netters and trappers paralyzed.

Respectfully,

W. H. HECKER.

ATHENS, O., *June 21, 1887.**Mr. Douglass, Sandusky, O.—*

DEAR SIR: Young eels were received and put in the Hocking River. They were in fine shape. Many thanks.

Yours truly,

W. H. LOWREY.

LOUDONVILLE, O., *August 29, 1887.**Mr. Douglass, Sandusky, O.—*

DEAR SIR: When your man brought me the silver eels in July I requested, if possible, you should send us some ring perch and a few trout. I have seen a few eels at different times near where I put them, leading me to believe they will do

well. The black-bass you sent me a few years ago have done splendid. Our streams are very fine, and anything you send us will be properly placed and carefully watched. I shall be absent from home in Washington from the first to the 15th of September, but would be glad to hear from you any time.

Yours truly,

DR. A. J. SCOTT.

BODKINS, O., *December 21, 1887.*

Mr. Douglass, Sandusky, O.—

DEAR SIR: I received the fish you sent me, and they were in fine condition.

Yours truly,

WM. SMART.

SALINA, O., *December 20, 1887.*

MR. DOUGLASS—DEAR SIR: The fish came all right. I was delighted. They are all alive.

Yours truly,

HENRY MORTON.

HOUSTON, O., *November 16, 1887.*

Mr. H. Douglass, Sandusky, O.—

DEAR SIR: The can of carp sent to James Akin arrived to-day. We immediately put them in our pond. We lost about 75. Accept our thanks.

Yours truly,

AKINS AND GRIFFIS.

NEWARK, O., *December 8, 1887.*

Mr. Douglass, Esq.—

DEAR SIR: The carp came all right. Mr. Tubbs and I planted them in the Reservoir yesterday. When are you going to have some trout to distribute? I would like to stock a few places that I know of. I think those places I have in mind are as good as any in the State. Please let me know how you are.

Yours truly,

SAM H. PARR.

LETART FALLS, O., *October 29, 1887.*

Mr. Douglass, Sandusky, O.—

DEAR SIR: I received the fish at the express office, and brought them home, 16 miles, and put them in my pond this morning. All alive and in splendid order. Please accept my thanks.

Yours truly,

ISAAC SAYRE.

POLK, O., *December 12, 1887.*

Mr. Douglass, Sandusky, O.—

DEAR SIR: I am pleased to acknowledge receipt of the carp. All in good condition. They arrived the same day you shipped. Thanks for your promptness.

Yours, etc.,

WM. HESS.

HUNTSVILLE, O., *November 5, 1887.*

Mr. H. Douglass, Sandusky, O.—

DEAR SIR: The carp arrived in good shape; only 6 were dead.

Yours truly,

H. P. INGALLS.

HAWK'S STATION, *November 5, 1887.*

Mr. H. Douglass, Sandusky, O.—

DEAR SIR: The carp which you sent came to-day. They came in good shape. They are all alive.

SAMUEL G. REED,
AND JAMES HARTLEY.

WEST TOLEDO, O., *November 17, 1887.*

Mr. Douglass, Sandusky, Ohio.—

DEAR SIR: I received the carp this P. M., as I could not get down sooner. They were all alive. Much obliged.

Yours, etc.,

TONY FRAZER.

MINGO, *October 30, 1887.*

Mr. H. Douglass, Sandusky, O.—

DEAR SIR: I received the carp on the 27th, all in good condition. All were alive. I put them into the pond. I would like to have 100 more, and will receive them at West Liberty any day, providing you let me know.

Yours truly,

S. METZ.

MCCONNELLSVILLE, O., *October 29, 1887.*

H. Douglass, Esq.—

DEAR SIR: The can of young carp came to hand on Tuesday evening. They were taken out into the country about three miles and emptied. About 100 were dead. A farmer named J. B. Farren, wants some carp also. If you ship in my care, I will see that they will be taken care of. I send the can back this P. M. Thanks for favors.

Yours truly,

E. M. STANBERRY

WELLSTON, O., *November 16, 1887*

Mr. H. Douglass, Sandusky, O.—

DEAR SIR: The fish arrived here to-day all right.

Yours, etc.,

PERRY HUNTER.

RICHWOOD, *November 18, 1887.*

Mr. Douglass, Sandusky, O.—

Fish received in good order. Much obliged.

Respectfully,

J. R. GOODING

RICHWOOD, *November 14, 1887*

Mr. Douglass, Sandusky, O.—

DEAR SIR: The carp you sent me came to hand in good condition. I have neglected to so state sooner.

J. L. McNEIL.

BERLIN CROSS-ROADS, *October 29, 1887.*

Mr. Douglass, Sandusky, O.—

SIR: My fish, and those of Mr. Fitzpatrick, came all right. Much obliged.

JAMES E. GODDARD.

WILKESVILLE, O., *November 9, 1887.*

MR. H. DOUGLASS—DEAR SIR: We received our fish on the 5th of November, all right.

Yours respectfully,

H. E. REID.

CHESTNUT GROVE, O., *October 29, 1887.*

Mr. Douglass, Sandusky, O.—

SIR: I received 40 carp yesterday, and put them in the same evening.

Yours truly,

W. W. CORDWELL.

JACKSON, O., *October 29, 1887.*

Mr. Douglass, Sandusky, O.—

DEAR SIR: I received the fish in splendid condition. Many thanks.

Yours truly,

JOHN JOHNSEN.

WHEELERSBURG, O., *November 1, 1887.*

Mr. Douglass, Sandusky, O.—

DEAR SIR: The fish arrived all alive and in good shape. Accept thanks for the same.

Yours respectfully,

D. H. FEURT.

VAN BUREN, O., *December 14, 1887.*

Mr. Douglass, Sandusky, O.—

DEAR SIR: The fish came to-day; only one dead. Accept my thanks.

Yours truly,

S. M. HARTMAN.

LYNCHBURG, O., *December 13, 1887.*

Mr. Douglass, Sandusky, O.—

DEAR SIR: The fish which you sent me came to hand September 10. All were alive. I am much obliged to you.

B. W. TURRILL.

JACKSON, O., *December 1, 1887.**Mr. Douglass, Sandusky, O.—*

DEAR SIR: I received the bucket of carp, seemingly in good condition. I would like to receive instructions for taking care of them.

Yours truly,

PICKET CLARK.

WILKESVILLE, O., *December 23, 1887.**Mr. Douglass, Sandusky, O.—*

DEAR SIR: The fish for myself and Mr. Long were received yesterday, in good condition.

Yours,

LEWIS LONG.

WOODFIELD, O., *December 9, 1887.**Mr. Douglass, Sandusky, O.—*

DEAR SIR: The pail of fish came all right.

Yours truly,

WM. DIEHL.

DUBLIN, O., *December, 5, 1887.**Mr. Douglass, Sandusky, O.—*

DEAR SIR: The bucket of fish came to-day, all right and in good shape. Many thanks.

Yours very truly,

WILLIS SELLS.

WILKESVILLE, O., *November 15, 1887.**Mr. Douglass, Sandusky, O.—*

DEAR SIR: The fish came to-day, and in good shape. There were 80 fish in my bucket, and 54 in Mr. W. G. Miller's bucket, all nice and lively. Accept thanks.

Yours truly,

J. G. MILLER.

HAWK'S STATION, VINTON Co., O.

Mr. Douglass, Sandusky, O.—

DEAR SIR: I received the fish in good order. Much obliged. They are all alive.

Yours truly,

CHARLEY FITZPATRICK.

NEWARK, O., *November 8, 1887.**Mr. Douglass, Sandusky, O.—*

SIR: The fish came in good shape and went into the water all alive. We could use some pickerel or black-bass, if you can spare some. Much obliged.

Yours truly,

LOUDENS, CIGARS & LITES.

WESTON, O., *October 27, 1887.**Mr. Douglass, Sandusky, O.—*

SIR: The pail of fish came all right yesterday. They were all alive.

Yours, etc.,

JOHN BEVERSTOCK.

HILLSBORO, O., *November 28, 1887.*

Mr. Douglass, Sandusky, O.—

SIR: I received the fish; all lively and healthy. Two of those sent Chaney were dead; all the rest were lively. Many thanks.

Yours respectfully, A. T. CUNNINGHAM.

JACKSON, O., *November 14, 1887.*

Mr. Douglass, Sandusky, O.—

SIR: I received the carp in good condition, for which accept thanks.

Yours respectfully, MOSES LIVESAY.

CROSSTOWN, O. *November 22, 1887.*

Mr. Douglass, Sandusky, O.—

SIR: I received the fish in good condition, for which favor accept thanks.

W. H. IRETON.

CHANDLERSVILLE, O., *November 3, 1887.*

Mr. Douglass, Sandusky, O.—

SIR: The fish arrived the second, and the agent here kindly changed the water, and they were in excellent condition, and are the finest fish I ever saw.

Respectfully, EBENEZER PYLE.

POWHATTAN, O., *November 4, 1887.*

Mr. Douglass, Sandusky, O.—

DEAR SIR: I received the pail of German carp in good order. They were all alive. Thanking you for kind favors, I am

Yours very respectfully, ALLEN RAMSEY.

CROSSTOWN, O., *November 10, 1887.*

MR. DOUGLASS—SIR: I received the fish in good order. There were only 50.

Yours respectfully, ROBERT IRETON.

ANTRIM, O., *September 29, 1887.*

MR. DOUGLASS—SIR: I received 40 fish, all hale and hearty. They were not so large as I expected, but was disappointed in getting so many. Thanks to good government and faithful officers.

S. W. STOCKDALE.

SONORA, O., *October 29, 1887.*

MR. DOUGLASS—SIR: I received the fish this evening, and they were in good condition, and all alive. They came this morning, but I could not get them before evening. Thanks to you.

Yours, truly, JOHN W. SLATER.

BERLIN CROSS-ROADS, *November 5, 1887.*

MR. DOUGLASS—SIR: The pail of carp reached me all right. The charges were 65 cents.

Yours, etc., A. H. VERNON.

APPENDIX B.

WARDENS' REPORTS.

ATHENS COUNTY.

There have been no violations of the game and fish laws. There is quite an increase in the quail and rabbits. On an average, 200 to 300 rabbits are shipped from this county daily. Over \$3,000 worth of furs were shipped from this county during the year.

Yours truly,

W. H. LOWREY,
Warden for Athens County.

BELMONT COUNTY.

Number of arrests for violations of fish law, 13; number of convictions, 3; cases carried to court, 7. There has been a big improvement in Belmont county since the arrest of the last seven men, especially along the Ohio River and Captina Creek. I haven't heard of a single violation since two violations of the game law were reported, but investigation showed there was nothing in either.

Yours, etc.,

W. N. DARBY,
Warden Belmont County.

WASHINGTON COUNTY.

I think the game and fish laws have done a great deal of good in this county. There are more quail and rabbits in this county than there have been for years. The people seem to observe the laws, and think they are good. I have made no arrests, as there were no violations of the laws came under my observation. There have been some complaints of violations of the fish law in the Ohio River, but the Prosecuting Attorney advised me not to make any arrests, as the river was in West Virginia, and I would be defeated. Please instruct as to the Ohio River.

Yours, etc.,

WM. HASSHA,
Warden Washington County.

LICKING COUNTY RESERVOIR.

Number of arrests, 7; carried to court, 7; unsettled, 7. There were no violations of the game laws that I know of. There has been quite an improvement in the observance of the laws, and also of the quantity of fish in the reservoir. The cases in court have been delayed on account of the death of the Judge at Lancaster.

Yours, etc.,

HENRY MINTHORN.
Warden Licking Reservoir.

PERRY COUNTY.

Around here they have adhered to the law, but I think in the south part of the county they have violated the law to some extent, but it would take time and money to catch them.

P. S. We have abundance of quail here this year, but our fishing is no good. They draw the water off so low that the fish perish in winter; and the law allows fishing with nets from October to April. The fish can't get around the nets, because they have to get in close quarters. I would suggest the keeping up the waters and stopping netting for a few years. The quail law is a good one.

Yours, etc.,

W. B. YOST,
Warden Perry County.

ROSS COUNTY.

Number of arrests for violation of fish law, 11; number of convictions, 3; fines collected, \$75. The Warden should be paid a salary, and be empowered to arrest with a warrant the same as a sheriff. The laws are adhered to very closely here where I live.

Yours truly,

R. M. MONROE,
Warden Ross County.

BUTLER COUNTY.

Number of arrests, 1; number of convictions, 1; costs and fines collected, \$31.10. The law has not been observed here. The paper mills kill the fish in the river with bleach; and as to the game, it got so bad I put in eight days riding over the county, but being so well known, I found I would have to send some one else. I furnished a man a gun and paid him \$1.50 a day, for four days. The result was, I arrested a party for shooting quail out of season. He pleaded guilty, and was fined \$25.00 and costs. He was the only support of a widowed mother, and to send him to jail would do no good, so he was let off with the promise to pay fifty cents a week, but he has not paid anything yet; but it had a good effect.

If the law was such that the informant would get half of the fine, then there would be a better chance to enforce it, as the farmers will not give any information. They are afraid they will be burned out, is their excuse.

Yours truly,

C. A. COOCH,
Warden Butler County.

MORGAN COUNTY.

Number of arrests for violations of the fish law, 5; number of arrests for violations of the game laws, 1; number of convictions, 6; fines collected, \$100.00. Two cases for using dynamite, but the parties escaped before being arrested.

The fine under the game law was against a boy ignorant of the law, and was remitted by the county commissioners at my request.

Yours, etc.,

JESSE FIMS,
Warden Morgan County.

LICKING COUNTY.

Number of arrests, fish law, 4 ; number of convictions, 3 ; cases unsettled, 3. I don't know that these fines have been collected, but that is the amount the three were fined for the violation of the fish law. I think there has been a great improvement in the last year. There were very few violations of the fish law with people who know the law. Some don't know it yet. I have cases reported to me, but the great trouble is to get the name of the parties and witnesses. Have investigated several of that kind, and have one on hand now.

I think it would be a good plan to distribute copies of the laws through the county.

Yours, etc.,

ROBERT BOWIE,
Warden Licking County.

FAIRFIELD COUNTY.

Number of arrests for violations of fish law, 7 ; number of arrests for violations of game law, 2. There are four indictments of the fish law, and two of the game law, pending in Fairfield Common Pleas Court. There are no funds to the credit of the fish and game fund.

The laws are pretty faithfully observed in this county. All begin to observe the law. We think there ought to be a fund provided to the wardens, as we are compelled to make great outlays, to see that the laws are observed.

Yours, etc.,

JOHN C. MEYERS,
Warden Fairfield County.

MUSKINGUM COUNTY.

Number of arrests for violations of game law, 3 ; number of convictions, 3 ; fines collected, \$75.00.

THOMAS ULRICH,
Warden Muskingum County.

VINTON COUNTY.

I will say that game has been as well protected as could be expected. There have been some violations of the laws, but could not get evidence enough to justify an arrest.

I think the rabbit law should come in the same time the quail law does, and that would not give them a chance to kill quail when out rabbit hunting. I also think there should be a salary paid to the wardens, so they could afford to spend time catching the hunters.

Yours, etc.,

E. L. FRY,
Warden Vinton County.

MONROE COUNTY.

I have done the best I could without anything to do it with. I often have farmers and hunters come to me after the laws and posters. I distributed all I had. I think what I have done has improved the hunting. Please sent me some more copies of the laws, and I will do the best I can ; but it is hard to do much without money. General observance of law, good.

Yours truly,

SAMUEL R. LINKARD.
Warden Monroe County.

HOCKING COUNTY.

There has been no violation of the game or fish laws. Everybody seems to be satisfied. There has been a wonderful improvement in the last year, the bird season showing from 50 to 75 % better. The only objection is on the part of the hunter, who claims they are too tame, or take a ground shot, which, among the better class of sportsmen, is not allowed. I doubt if Hocking county could be in a much better condition. I have a majority of the farmers interested, and in time will have all.

Yours truly,

WM. H. HECKER,
Warden Hocking County.

NOBLE COUNTY.

The laws, so far as I know, have been strictly obeyed in this county. I would recommend that wardens be paid a salary, to be paid out of the fish and game fund.

Yours respectfully,

WM. DENNIS,
Warden Noble County.

ADAMS COUNTY.

When I was appointed warden of this county I made up a purse of \$10 and advertised in the county papers, offering \$10 reward to any one who would report to me any person violating the game law. Consequently I have not been able to find or hear of the law being violated. Though I believe it has been violated to some extent since October 1, I could not find out the same to be a fact. I think it would be well to have the rabbit law amended so that the time for hunting rabbit and quail would come in together.

Yours, etc.,

OLIVER H. P. COOLY,
Warden Adams County.

BROWN COUNTY.

(Report forwarded to Secretary of Commission.)

Yours, etc.,

M. M. MURPHY.

HAMILTON COUNTY.

Number of arrests for violation of fish law, 2; number of arrests for violation of game law, 10; fines collected, \$37; number of convictions, 10; number of cases dismissed, 2. The law has been much better observed this last year. The people have become more acquainted with the law, and feel better with the results. Quail is more plenty in Hamilton county than for twenty years, and fish in our streams are more plenty. There are places where the law is violated in the county. The expense is too much for the warden to go and attend to it. The warden has received great encouragement from the Cuvier Club, and more especially from Mr. Clay Culbersen. I would suggest that the rabbit and quail law come in at the same time.

W. J. HEDDLESTEN,
Warden Hamilton County.

CLINTON COUNTY.

Number of arrests for violation of fish law, 3. The three persons arrested were non-residents of the county, and were confined in county jail for a short time, then released on condition of leaving the county, they having no visible means. Fish and game policemen appointed for the county have been on the alert, and so a vigorous prosecution of the violation of the fish and game laws. The year preceding created a wholesome record for the same.

Yours, etc.,

WM. W. MORRIS,
Warden Clinton County.

WARREN COUNTY.

Number of arrests for violation of fish law, 1. There has been a great improvement in the protection of fish and game. Only isolated cases of shooting quail came to my knowledge, but, on investigation, most of them proved to be rabbit-shooting, which caused me a great deal of trouble and expense. One or two cases I will bring before the next grand jury, as parties will not give evidence without. Some cases of box-fishing at Franklin, and as the parties know me they keep on the lookout for me. We will have to hire a detective to catch them. I do not understand the wardens are expected to use vigilance all over the country and bear their own expenses. I have done so for nearly two years, and while I am very anxious to preserve the fish and game, I cannot afford to do the cause justice, as I am already out considerable time and money. I think it would be a great benefit to the preservation of fish and game, if the Legislature would pass a bill giving the much-abused wardens a salary and half of the fine to the informer. Have rabbit and quail law to commence and end at the same time. I would suggest that the season of quail and rabbit be from November 10 to December 15. After December 15, having snows come, the quail get cold and hungry, and are easily tracked up and killed in bunches, with great loss of life to the beautiful quail. Also, the protection of the meadow-lark at all times.

WM. T. GLASSFORD,
Warden Warren County.

GREENE COUNTY.

Number of arrests for violation of the game law, 3. I would say that the law has done great good in this county. There is no doubt that there has been violations of the game and fish law, but the greatest difficulty is to prove it.

JEREMIAH PARKHILL,
Warden Greene County.

PIKE COUNTY.

Number of arrests for violation of fish law, 4; number of convictions, 4; cases unsettled, 4. In general the law has been well observed; better than I expected. If there has been other violations I have had no information. The four cases were tried before our mayor, and he gave them a limited time to pay up, but up to date nothing has been done. We are abundantly supplied with fish, viz., pike, bass, and a few salmon. Of pike, some were caught that weighed 38 pounds. Black-bass, carp and shad are coming in fast, showing good work of the Commission. Game is more plentiful than last year, especially quail.

JAMES E. EMMETT,
Warden Pike County.

CLERMONT COUNTY.

Number of arrests for violation of fish law, 2; number of arrests for violation of game law, 1; number of convictions, 2; cases carried to court, 3; fines collected, \$25. The grand jury has found three true bills; two have been sentenced; one paid; the other has skipped the county. The charge was catching fish with a hook attached to a pole. The defense would not stand. The other case has not come up.

J. C. KENNEDY,
Warden Clermont County.

MIAMI COUNTY.

Number of arrests for violation of fish law, 10; number of arrests for violation of game law, 4; number of convictions, 12; fines collected, \$104. Of the above, two cases were dismissed on ground of condition and circumstances. Two cases yet unpaid in Squire Bard's court at Troy, Ohio. Owing to his liberality they have not been forced to pay. I called three times and insisted on him bringing them in. There has been a good improvement in the observance of the game and fish law, and I believe a great increase in the native birds of all kinds.

JOHN HAIRBAUGH,
Warden Miami County.

MONTGOMERY COUNTY.

Number of arrests for violation of fish law, 2; number of arrests for violation of game law, 5; number of convictions, 1; fines collected, \$25. The game and fish laws have been rigidly enforced, and game and birds have been more plentiful than previous years. The Game and Fish Club has left nothing undone to bring violators to justice.

L. K. BUNTAIN,
Warden Montgomery County.

PICKAWAY COUNTY.

Number of arrests for violation of fish law, 4; number of arrests for violation of game law, 2; number of convictions, 4. The fines in the other cases were remitted by the payment of costs.

D. W. STEIN,
Warden Pickaway County.

SCIOTO COUNTY.

I have been unable to make an arrest this year. I offered \$25 reward, and had it published in three of our papers, for evidence that would lead to the conviction of any one violating the game or fish law. I think there should be a reward offered for hawks' scalps. Quail are not as plentiful as last year.

J. W. McKEOWN,
Warden Scioto County.

LEWISTOWN RESERVOIR.

Number of arrests for violation of fish law, 4; cases carried to court, 3. These three cases were brought before the grand jury and were dismissed.

JAMES A. BERRY,
Warden Lewistown Reservoir.

AUGLAIZE COUNTY.

There has been a good observance of the law. I patrolled the county thoroughly and destroyed seven set-nets in the canal. I could not find the owners. There have been violations of the game and fish laws in Mercer county on the Mercer County Reservoir, but could not get evidence to convict.

E. P. Goss,
Warden Auglaize County.

HARDIN COUNTY.

Number of arrests for violation of game law, 1; fines collected, \$5.00; convicted, 1. In the above case the party had three deer offered for sale on the 21st of January, and was fined by the mayor. Would not pay fine, and was sent to jail for 30 days; was taken out on a writ of habeas corpus and taken before the Probate Judge and released. There were quail killed before the season opened, and I have eight or ten names, but cannot get evidence to convict them.

HARRY N. DUBBS,
Warden Hardin County.

MERCER COUNTY.

Number of arrests for violation of fish law, 1; number of arrests for violation of game law, 2; number of convictions, 2; fines collected, \$50; cases carried to court, 1. In the case of Smith, for shooting quail out of season, he was bound over to court, and the case was ignored by the grand jury. In this case I was eleven miles from home, at the expense of arrest and livery hire. My whole expense, aside from the attorneys' fees, was \$8.00.

JOHN GILLESPIE,
Warden Mercer County.

MADISON COUNTY.

My policeman watched closely through the close season, and the law has been obeyed. There may be cases of parties who have violated the law, but for want of sufficient evidence it was thought best not to arrest any one. The law is a good one.

Yours truly,

R. G. DRAKE,
Warden Madison County.

HIGHLAND COUNTY.

I have been sick for five weeks past, and could not get around, but the law has been better observed than last year. I am in the corner of the county. You should get some one in Hillsboro.

Yours, etc.,

W. H. IRWIN,
Warden Highland County.

CLARKE COUNTY.

Number of arrests for violation of fish law, 6; number of arrests for violation of game law, 1; fines collected, \$25; cases carried to court, 2.

A. McWILSON,
Warden Clarke County.

SHELBY COUNTY.

Number of arrests for violation of fish law, 2; number of convictions, 2. The prospects are that more will go to jail this next court. I would recommend a law to prohibit any one to own a net, except for minnows, for it is impossible to catch them without laying out at night, and that cannot be done for nothing.

Yours very truly, FREEMAN C. FOSNIGHT,
Warden Shelby County.

SUMMIT COUNTY.

We have \$78.81 yet in the game and fish fund, for which there is no use. I attended to the warden business, but I found out that there was no way for me to get my fees, so I had to abandon it. I have not got my fees for last year or this year. I would like to attend to this and see the law enforced, but cannot do it for nothing.

Yours, etc., GEORGE HES,
Warden Summit County.

TUSCARAWAS COUNTY.

Number of arrests for violation of fish law, 5; number of arrests for violation of game law, 1; number of convictions, 2; fines collected, \$50. There has been a general observance of the law as far as I can learn, with a few exceptions, when I could not get evidence to make a case. I hope the law will be amended so as to make the close season on all game the same. Minnows should be caught with dip-nets, as it is an outrage the way small fish are destroyed with seines.

SOLOMON GLODFELTER,
Warden Tuscarawas County.

CUYAHOGA COUNTY.

Number of arrests for violation of game law, 14; number of convictions, 13; cases carried to court, 4; cases unsettled, 2. During the last season I made no attempt to make any arrests, as all those previously brought into court were held in obedience. It is gratifying, however, to know that the arrests made last year had a wholesome effect on those who defied the law previously. I am free to say that the fish law was generally respected so far as my limited observation extended.

Yours, etc., WARDEN CUYAHOGA COUNTY.

LORAIN COUNTY.

I think you will credit us with being the banner county in regard to violations of the game and fish law. I have been east and west on the lake-shore, but failed to capture anything but a cold. I think the law has been well observed here in this regard.

Yours truly,

R. E. BRAMAN,
Warden Lorain County.

ASHLAND COUNTY.

There has been a number of violations reported to me, but always failed in evidence. There are a number of lakes and streams I would like to see stocked with black-bass and eels. Why not send the warden such fish as are needed to stock the streams and make a start to stock and protect? I would also like to see the premium on hawks restored.

Yours truly,

WM. HESS,
Warden Ashland County.

COLUMBIANA COUNTY.

The fish and game laws have been very well observed. It has been remarked by a good many of the citizens that the law has been better observed than they expected. The game and fish are plentier than before the law passed. There has been a decided improvement in the observance of the law.

Yours very truly,

WM. M. HOSTETTER.

HOLMES COUNTY.

Number of arrests for violation of fish law, 3; number of arrests for violation of game law, 4; cases unsettled, 5; fines collected, \$100. I think there is quite an improvement in the minds of the people in favor of the laws. Also, that they will co-operate with the warden to enforce the law. I would suggest that the fine for dynamiting be raised to \$50, and that squirrels be protected until September, and the protection to "cat-birds" be dispensed with. The lark should be protected, as it is a benefit to farmers. I also suggest that the commissioners furnish the farmers with fish for stocking ponds free.

Yours, etc.,

HENRY SHIRE,
Warden Holmes County.

GEAUGA COUNTY.

Number of arrests for violation of game law, 1; number of convictions, 1; fines collected, \$25. I think the game and fish laws have been better observed than last year. I think a deputy in each town would be a help.

Yours truly,

MORRIS TRUMAN,
Warden Geauga County.

WAYNE COUNTY.

Number of arrests for violation of fish law, 2; number of arrests for violation of game law, 1; number of convictions, 1; fines collected, \$25. Except in the above cases the law has been kept and well observed. Game is more plentiful than last year. If I had a better opportunity of making observations, as one duly authorized to do so, I could do better. Is there no way by which I can be paid so I can give it my entire attention?

Yours truly,

A. IAN LONG,
Warden Wayne County.

TRUMBULL COUNTY.

Number of arrests for violation of game law, 1; number of convictions, 1; fines collected, \$50. I would suggest that a law be passed protecting the lark, and the game wardens be allowed one-half of the fines. I would recommend the appointment of policemen in townships. There has been a marked improvement in the laws from last year.

Yours very truly,

JULES VANTROT,
Warden Trumbull County.

CARROLL COUNTY.

There has certainly been an improvement in the observance of the laws over that of last year. And while we believe, in isolated cases, there have been violations of the game law, yet the information was such that did not justify a prosecution.

Yours, etc.,

ALONZO E. FOX,
Warden Carroll County.

BROWN COUNTY.

The laws have been generally observed. There have been some violations, but it has been impossible to get testimony. The law should be so amended as to make the open season for quail and rabbit the same. The law should be so amended as to make every landowner a game policeman.

M. M. MURPHY,
Warden Brown County.

MEDINA COUNTY.

Number of arrests for violation of fish law, 2; number of arrests for violation of game law, 12; number of convictions, 5. The laws have done good here, yet it don't pay the warden. We have a nice lake here, and it has stopped many who used dip-nets heretofore. Now there is plenty of fishing with hook and line. If you will send me fish I will stock this lake. Stop the shooting of quail and give a bounty for English sparrows.

Yours, etc.,

N. N. RERSE,
Warden Medina County.

SANDUSKY COUNTY.

Number of arrests for violation of game law, 1; number of convictions, 1. I have also taken from the river and bay seven pound-nets and eleven tyke-nets. In the above case the fine was \$25, but it was remitted by the justice. The game law has been well observed here, but there are some violations in the bay.

Yours truly,

MORT R. SMITH,
Warden Sandusky County.

ERIE COUNTY.

There has been a better observance of the law here than last year.

C. A. DILDINE,
Warden Erie County.

OTTAWA COUNTY.

Arresting violators of the game and fish law in Ottawa county is a dead letter. Last October I took up 18 pound-nets, and in November I took 6 pound-nets and held them till December the 5th, when they were replevined. I also took and burned 380 pound-poles. I could have made many arrests, and had violators bound over to court, but for the above reason. Of the seven arrests made a year ago, not one has yet been prosecuted.

Yours truly,

W. W. WARD,
Warden Ottawa County.

LUCAS COUNTY.

Number of arrests for violation of fish law, 6; number of convictions, 4; fines collected, \$40. There has been an improvement in the enforcement of the laws. Public sentiment is in favor of the law. Last year the law was generally violated in the Maumee River. Only two nets were put in Ottawa River. One was immediately taken out and a warrant is out for the arrest of the owner of the other. Swan Creek is clear of nets.

Yours truly,

WM. R. LIFLET,
Warden Lucas County.

APPENDIX C.

LETTERS FROM PROMINENT FISH DEALERS.

SANDUSKY, O., *January 6, 1888.*

Mr. Douglass, Sandusky, O.—

DEAR SIR: Your request of the 5th to hand. Our catch of white-fish the year of 1886 was from 40 to 50 tons, and the light catch was on account of unfavorable weather. Our catch of 1887 was from 125 to 150 tons. This is the largest catch we have had for ten years. We have no doubt the propagation of white-fish in the waters of Lake Erie is a success, and all dealers here have the same opinion.

Yours,

H. C. Post & Co.

TOLEDO, O., *November 18, 1887.*

Mr. Douglass, Sandusky, O.—

DEAR SIR: In reply to yours of the 16th, we will say that we certainly feel that your efforts to re-stock Lake Erie with white-fish have been crowned with success, for we have not had for fifteen years so large a catch of white-fish as we have had the present season. There were strong indications last fall of a largely increased catch of white-fish, but on account of unfavorable weather we were unable to take the fish. We feel confident that if we would have had favorable weather we would have had a fine catch then, as well as this year. Our neighbors all have had a largely increased catch this fall.

We cannot see why the propagation of white-fish is not a success. We feel that the hatcheries should have great credit and encouragement.

Yours respectfully,

D. H. HOWELL & SON.

SANDUSKY, O., *January 7, 1888.*

Mr. C. V. Osborn, Dayton, O.—

DEAR SIR: By request of Mr. H. Douglass, I herewith give you the amount of white-fish caught during the year of 1886 and 1887, by the following fish dealers in Sandusky, Ohio:

Henry Lay & Co.—1886—spring, 9,573 lbs.; fall, 18,228 lbs.; 1887—spring, 14,207 lbs.; fall, 39,174 lbs.

Adolph & Zollinger—1886—spring, 5,000 lbs.; fall, 39,000 lbs.; 1887—spring, 7,000 lbs.; fall, 63,000 lbs.

Arend Bros.—1886—spring, 6,370 lbs.; fall, 15,840 lbs.; 1887—spring, 11,285 lbs.; fall, 32,765 lbs.

Simon Schacht—1886—whole year, 28,095 lbs.; 1887—whole year, 48,740 lbs.

A. J. Stoll—1886—spring, 13,200 lbs.; fall, 45,530 lbs.; 1887—spring, 16,590 lbs.; fall, 86,000 lbs..

Lay Bros.—1887—whole year, 68,000 lbs.

You will notice that there has been an increased catch in 1887. This, we think, is due to the hatchery here. We trust you will recognize this fact and continue the good work, and work for an increased appropriation so the hatchery may be enlarged.

Yours,

A. J. STOLL.

SANDUSKY, O., *January 7, 1887.*

Mr. C. V. Osborn, Dayton, O.—

DEAR SIR: The copy of the proposed new fish bill sent me some time ago, with note on the margin, "How the time in 29 to 32 suits the lake fishermen; if not, what do you suggest?" I have submitted to dealers in Vermillion, Huron, Sandusky, Port Clinton, and fishermen in the Island regions. They all agree that the time, as suggested, if made general, will be all right. The clause (lines 45 and 46) is hardly clear to most of them, as you will understand, at the close of the season. Dealers intend to handle Canada and upper lake fish in ice. They think that it should read, "No person shall buy, sell, or offer for sale, or have in possession any fish caught in any of the waters lying in the State of Ohio, out of season, or in any manner prohibited." Otherwise the law is a plain, sensible one, and if passed you will have the hearty co-operation of all dealers and fishermen in Sandusky. Trusting that your work in this direction may prove popular with the fishing community, I remain,

Yours truly,

A. J. STOLL.

FISH COMMISSIONERS.

The United States.— ————, Washington, D. C.

Alabama.—Col. D. R. Hundley, Madison.
Hon Charles S. G. Doster, Prattville.

Arizona.—J. J. Gosper, Prescott.
Richard Tutt, Tombstone.
J. H. Taggart, Manager, Yuma.

Arkansas.—James H. Hornibrook, Little Rock.
H. H. Rottakin, Little Rock.

California.—R. H. Buckingham, Sacramento.
Hon. A. B. Dibble, Secretary and Treasurer, Grass Valley.
Thos. J. Sherwood, Marysville.

Canada.—Hon. John Tilton, Ottawa, Ont.

New Brunswick.—W. H. Venning, Inspector, St. John.

Nova Scotia.—W. H. Rogers, Amherst.
A. C. Bertram, North Sidney.

Prince Edwards Island.—J. H. Duvar, Alberton.

Quebec.—W. Wakeman, Gaspi Basin.

British Columbia.—Thomas Mowat, New Westminster.

Manitoba.—Alex. McQueen, Winnipeg, Man.
S. Wilmot, New Castle, Ont.

Colorado.—John Pierce, Denver.

Connecticut.—Dr. Wm. Hudson, Hartford.
Robt. G. Pike, Middletown.
James A. Bill, Lynn.

Delaware.—Enoch Moore, Wilmington.

Georgia.—Hon. J. T. Henderson, Atlanta.
Dr. H. H. Carey, LaGrange.

Illinois.—N. K. Fairbanks, Chicago.
S. P. Bartlett, Quincy.
Maj. Geo. Brenning, Centralia.

Indiana.—Enos B. Reed, Indianapolis.

Iowa.—E. D. Carlton, Spirit Lake.

Kansas.—S. Fee, Wamego.

Kentucky.—Wm. Griffith, Louisville.

P. H. Darby, Princeton.

J. B. Walker, Madisonville.

Hon. C. J. Walton, Muffordville.

Hon. J. A. Steele, Midway.

W. C. Pierce, Danville.

Dr. W. Van Antwerp, Mt. Sterling.

Hon. S. M. Chambers, Independence.

A. H. Goble, Catlettsburg.

I. H. Mallory, Bowling Green.

Maine.—E. M. Stillwell, Bangor.

Henry O. Stanley, Dixfield.

B. W. Counce, Thomaston.

Maryland.—G. W. Delawter, Oakland.

Dr. E. W. Humphrey, Salisbury.

Massachusetts.—E. A. Brackett, Winchester.

E. W. Putnam, Cambridge.

E. H. Lathrop, Springfield.

Michigan.—Dr. J. C. Parker, Grand Rapids.

John H. Bissell, Detroit.

Hershel Whittaker, Detroit.

W. D. Marks, Superintendent, Paris.

A. J. Kellogg, Secretary, Detroit.

Minnesota.—1st District, Daniel Cameron, La Crescent.

2d District, Wm. M. Sweeney, Red Wing.

3d District, Robert O. Sweeney, St. Paul.

S. S. Watkins, Superintendent, Red Wing.

Missouri.—J. G. W. Steedman, St. Louis.

Gen. J. L. Smith, Jefferson City.

H. M. Garleigh, St. Joseph.

Nebraska.—W. L. May, Fremont.

R. R. Livingston, Portsmouth.

B. E. B. Kennedy, Omaha.

Nevada.—W. M. Carey, Carson City.

New Hampshire.—Geo. W. Riddle, Manchester.

E. B. Hodge, Superintendent, Plymouth.

John H. Kimball, Marlboro.

New Jersey.—Richard S. Jenkins, Camden.

Wm. Wright, Newark.

F. M. Ward, Newton.

New York.—Hon. R. B. Roosevelt, New York.

Gen. Richard U. Sherman, New Hartford.

Eugene G. Blackford, Fulton Market, N. Y.

Wm. H. Bowman, Rochester.

Superintendents—Seth Green, Rochester.

Fred. Mather, Cold Spring Harbor.

Monroe A. Green, Mumford.

F. A. Walters, Bloomingdale.

Secretary—H. H. Thompson, box 25, N. Y.

North Carolina.—No Commissioner.

Pennsylvania.—John Jay, President, Greensburg.
H. H. Derr, Secretary, Wilkesbarre.
Arthur Magginis, Philadelphia.
Aug. Duncan, Treasurer, Chambersburg.
Charles Porter, Corry.

Rhode Island.—J. H. Barden, Rockland.
Henry T. Root, Providence.
Wm. P. Morton, Providence.

South Carolina.—Hon. A. P. Butler, Columbia.

Tennessee.—W. H. McDowell, Memphis.
H. H. Sneed, Chattanooga.
Edward D. Hicks, Nashville.

Vermont.—Hiram A. Cutting, Lunenburg.
Herbert Brainard, St. Albans.

Virginia.—Col. Marshall McDowell, Berryville.

Washington Territory.—Albert T. Stream, North Cove.

West Virginia.—C. S. White, Romney.
W. A. Manning, Talcott.
T. J. Baxter, Treasurer, Braxton C. H.

Wisconsin.—The Governor, *ex-officio*.
Philo Dunning, President, Madison.
C. L. Valentine, Janesville.
J. V. Jones, Oshkosh.
A. V. H. Carpenter, Milwaukee.
Mark Douglas, Melrose.
Colvert Spensley, Mineral Point.
James Nevin, Superintendent, Madison.

Wyoming Territory.—Otto Graum, Laramie.
D. W. N. Hunt, Cheyene, Commissioner for Laramie county.
B. F. Northington, Rawlins, Commiss'er for Carbon county.

THIRD ANNUAL REPORT
OF THE
Ohio State Forestry Bureau,
TO THE
GOVERNOR OF THE STATE OF OHIO.
FOR THE YEAR 1887.

COLUMBUS, O., *June*, 1888.

To His Excellency, J. B. FORAKER, Governor of Ohio—

SIR: In accordance with section 3 of an act to establish a State Forestry Bureau, which is as follows: "This Bureau shall annually make a report to the Governor, which shall contain the results of the investigation, together with such other information as the Board may deem necessary for the promotion of forestry in this State," etc., we present for your favorable consideration a memorandum of our contemplated work necessary to be done, with the assistance of your Excellency, in calling the attention of the Legislature to such thoughts and work as will eventually show the work done under the most trying circumstances.

As you well know that the retaining, preserving, and cultivation of forests is yet in their infancy, and looked upon as an unnecessary undertaking, we would call your attention—

First: To the forest of woods adjacent to the sources of streams such as the Muskingum, Licking, Miami, Scioto and others, where the supply of water for the canals is obtained.

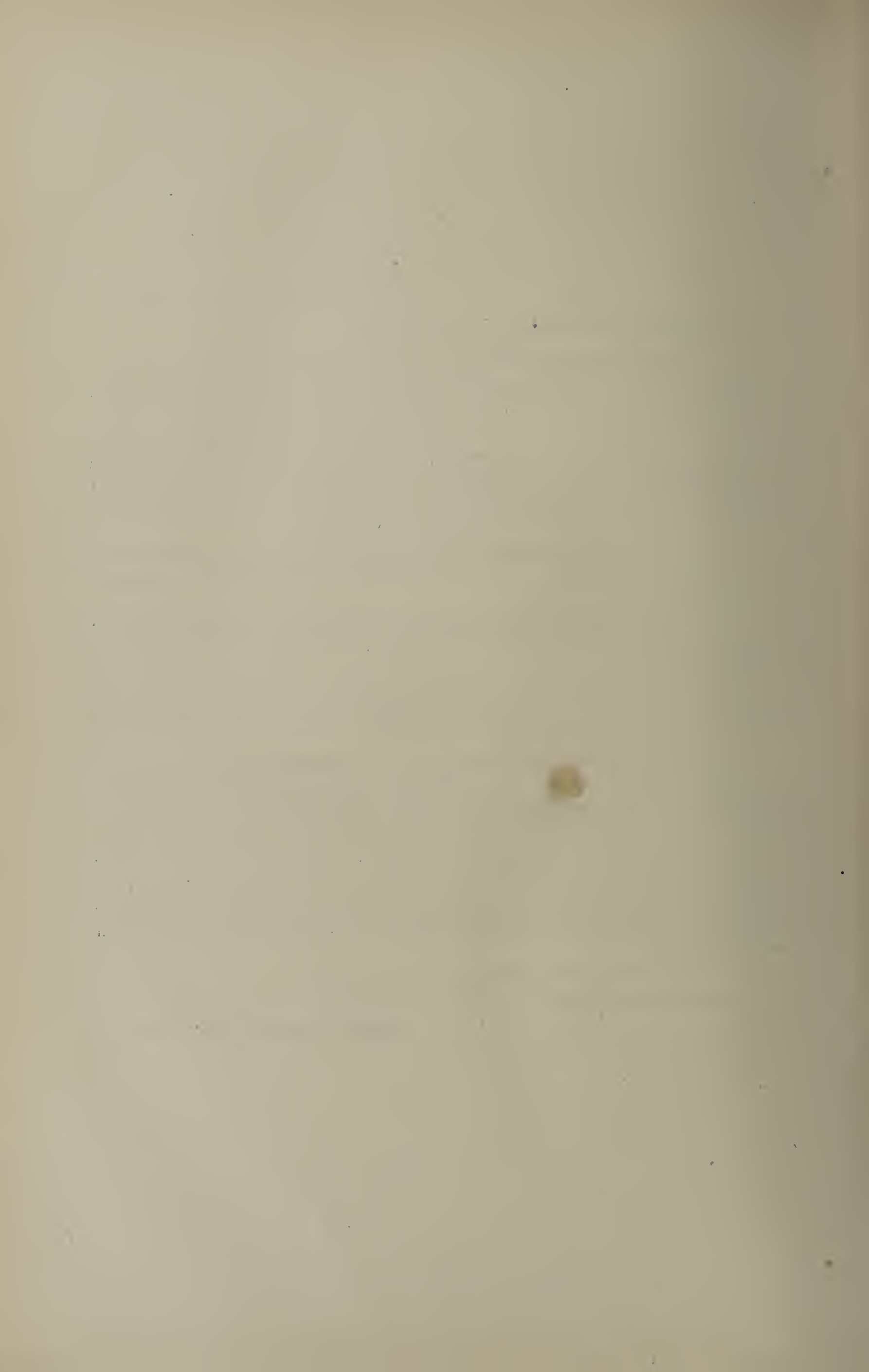
Second: By an injudicious management forests are disappearing rapidly, to the great injury of our agricultural and industrial interests, as has been shown in our two volumes of previous years.

The intelligent farmer and landowners are beginning to take an interest, and are seeking knowledge in matters pertaining to forestry, and the Legislature has wisely suggested that a part of the Ohio State University grounds, with the consent of the Trustees, may be used as a part of an experimental station to the benefit of the students and others interested in forestry. But unfortunately the whole grounds were turned over to the regents for other purposes; therefore, we are compelled to seek other places for an experimental station, and would suggest that the Legislature may turn over to this Bureau some of the Virginia Military lands which are not yet sold.

We also submit to you our Secretary's and other report.

Respectfully submitted.

LEO WELTZ,
President Ohio State Forestry Bureau.



PREFACE.

In presenting this third annual report upon Forestry in Ohio, a few general remarks regarding the labors of the Bureau and its encouragement will not be out of place.

That this volume bears but little evidence of research by the Bureau direct is no evidence that the investigations into the forestal affairs of Ohio have been discontinued, but merely indicates that the labors in this direction are not complete. This is chiefly due to two causes :

First—To the interruption caused by frequent demands from farmers and others interested in forest-tree culture for information on various forestal topics, and by sending out the reports of the Bureau. Frequently these inquiries were of a nature that an intelligent answer involved considerable study. Inconvenient as the attention to this special labor was, it has always been our aim to faithfully reply to all such questions.

Second—The want of sufficient means. Much of the clerical work, such as mailing of reports, sending out of circulars, etc., might have been performed by an assistant, which would have considerably lessened the interruption of the investigation, but the meager appropriation of five hundred dollars for the maintenance of the Bureau made such assistance impossible.

A striking contrast to these impediments are the friendly encouragements from friends of forestry at home and abroad.

Great credit is due to the press in various parts of the country for the assistance rendered to the Bureau in promulgating the results of the labor of former years. In addition to this, some editors and publishers have further aided me in my labor by favoring me with their publications. The following journals are received regularly and kept on file :

The Ohio Farmer, Cleveland, O.

The Country Gentleman, Albany, N. Y.

The Prairie Farmer, Chicago, Ill.

The Kansas Farmer, Topeka, Kas.

Farm and Home, Springfield, Mass.

Northwestern Farmer and Breeder, Fargo, Dak.

Lumber Trade Journal, Chicago, Ill.

The Timberman, Chicago, Ill.

The Woodworker, Indianapolis, Ind.

Manufacturer and Builder, New York, N. Y.

Forest Leaves (Pennsylvania Forestry Associat'n), Philadelphia, Pa.

Several contributions solicited and intended for this volume have been laid over for publication in the next, either to be supplemented by another article, or to supplement an article now under preparation.

ADOLPH LEUE'.

TREASURER'S REPORT.

December	17, 1886.	Adolph Leué, salary as Secretary.....	\$100 00
	29, "	Adolph Leué, postage, etc.....	20 50
	29, "	Leo Weltz, expenses.....	8 50
	29, "	J. B. Peaslee, expenses.....	10 90
January	5, 1887.	Central Ohio Paper Co., stationery	6 65
	29, "	H. Wilson, postage, etc.....	25 25
February	5, "	Siebert and Lilley, binding reports.....	21 30
April	23, "	Leo Weltz, expenses	71 20
	23, "	Adolph Leué, salary and expenses.....	130 15
July	13, "	James Poindexter, expenses.....	7 00
	16, "	J. B. Peaslee, expenses.....	3 00
	19, "	Leo Weltz, expenses.....	14 30
August	11, "	Adolph Leué, salary as Secretary.....	100 00
	12, "	H. Wilson, postage.....	6 40
	17, "	Henderson, Achert & Co., seal.....	11 00
September	12, "	Leo Weltz, expenses.....	3 50
	12, "	James Poindexter, expenses.....	15 00
October	1, "	Leo Weltz, expenses.....	50 00
	25, "	Adolph Leué, salary as Secretary 3 months.....	100 00
	25, " •	Adolph Leué, bills paid.....	50 65
November	30, 1887.	Adolph Leué, salary and expenses.....	139 00
	30, "	James Poindexter, expenses.....	16 62
	30, "	Leo Weltz, expenses.....	53 00
January	11, 1888.	Leo Weltz, expenses.....	18 00
	11, "	Wilmington Journal, advertising.....	12 00
February	9, "	J. B. Peaslee, expenses.....	11 30
	9, "	Adolph Leué, expenses	20 00
	9, "	Leo Weltz, expenses.....	15 00

Total	\$1,040 22
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By balance of appropriation in State Treasury.....	\$63 52
Received from former Treasurer.....	76 07
State appropriation for 1888.....	1,500 00

Total	\$1,639 59
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Respectfully submitted.

JAMES POINDEXTER, *Treasurer.*

MEMBERS OF THE BOARD.

	Commission expires.
LEO WELTZ, <i>President</i>	April 27, 1889.
DR. JOHN B. PEASLEE, <i>Vice-President</i>	April 27, 1891.
REV. JAMES POINDEXTER, <i>Treasurer</i>	April 27, 1893.
ADOLPH LEUE', <i>Secretary</i> .	

ANNUAL REPORT.

THE FORESTRY QUESTION IN OHIO.

TO THE BOARD OF DIRECTORS OF THE STATE FORESTRY BUREAU.

By ADOLPH LEUE', Secretary.

The great problem which the people of the country are called upon to solve is, as I stated last year: *To perpetually keep a certain percentage of the superficial area of our country in forests, properly distributed, and to use and husband this in a manner that its usefulness be unimpaired.*

According to the difference in the existing forestal relations, the question presents itself to the people in a different form—

1. In sections thickly wooded, as in portions of the North, South and West, the question is, *to reduce the wood-land area.*

2. In sections bare of trees, as are our vast prairies, the all-important question is, *how to raise forests.*

3. And in those sections which are tolerably well wooded, as in Pennsylvania, Kentucky, Indiana, and our own State, *Ohio*, the chief question is, *to preserve and properly manage existing wood-lands, and to re-forest so much of denuded lands as the agricultural and industrial interests of the State demand.*

The neglect of this question involves a speedy annihilation of our existing forests. In spite of everything which has been done by private individuals and by the State, to educate people in matters pertaining to forestry, our wood-lands are decreased in size and deteriorated in condition. Forests spared by the ax and by fire are ruined by insects and by domestic animals.

The question this Board should seriously consider is, *what should the State of Ohio do to counteract the tendency of forest annihilation?* A reduc-

tion of the tax on wood-land or the exemption of wood-lands from taxation has been proposed. Legislation in this direction would certainly be a powerful incentive to preserve existing wood-lands and to create new forests. It is, therefore, not at all strange to see the friends of our wood-lands and even farmers to raise this question, and to advocate the passing of laws exempting all wood-lands from taxation.*

Though I have spoken of this on previous occasions, let me repeat it, that a law exempting wood-lands from taxation has been found to be unconstitutional. Any steps taken to secure the passage of such a law is a waste of time and energy.

The friends of this measure then proposed a change in the Constitution, that such a law might be enacted. Suppose that such a change be made, which is, however, not at all probable, the question arises, *how would such a law affect other interests, especially agriculture?* Very seriously indeed, for the burden of tax would necessarily be thrown upon agricultural lands, and the farmer who owns but a few acres would be the sufferer; for he cannot afford to wait for returns which forestry offers; he must keep his scanty means in circulation. But aside from this there is no good reason why forests should be exempted from taxation, for practical forestry, it has been shown, is a remunerative occupation. True, quite a number of farmers, who have tried their hands in forestry, failed to realize any profits—so they have in agriculture. Such failures, if they illustrate anything, show the great need of information in practical forestry. It is to be hoped that no further efforts will be made to exempt wood-lands from taxation.

In regard to the question, *should a tax be levied to pay premiums on forest-plantation?* let me say, that several States have done it, and the effect has been a good one, inasmuch as it became an incentive to the planting of forest-trees, and in calling attention to the necessity of planting forests. The result of gaining experience, too, was worth something. But at the present day, when the need of practical forestry is felt everywhere, and when artificial means of bringing the matter properly before the people are needed no more, there seems to be no reason why the State should pay a premium for what is known to be a paying investment.

*The latest movement in this direction which has come to my knowledge, is a memorial to the Legislature of this State, which was circulated among the farmers of Clermont county, of which the following is a verbatim copy :

To the General Assembly of the State of Ohio—

GENTLEMEN: In consideration of the effort making to preserve and increase the forest area, and to the more surely accomplish said purpose, as well as to relieve the farmers of unjust taxation, we, the undersigned, tax-payers of the State of Ohio, do hereby petition your "Honorable Body" to enact, at your earliest convening, such laws as will exempt from taxation all lands (in the State of Ohio) occupied by forest-trees, and also all that portion of farm-land included within the limits of any township, county, or State road.

In this matter of forest legislation it should be remembered that *the best laws in the world will not protect the forests or advance the forestry interest where an intelligent management of forests is wanting.* The forestal affairs are known to be best in those countries which have the best educated foresters. In due recognition of this, the different countries of Europe have established schools of forestry, some of which are isolated academies, some are connected with universities. These institutions are, as a rule, well equipped with libraries and scientific instruments, and the graduates of such institutions are in rank equal to those from universities.

The necessity of establishing such schools in this country has been felt and advocated by men whose sagacity is beyond doubt. At the beginning of this decade the Congress of the United States was petitioned to establish a national school of forestry; but to no effect. State legislatures, too, have been asked to provide for the establishment and maintenance of at least one such school, but to no effect. State legislatures, too, have been petitioned to provide instruction in forestry in the schools of agriculture, with no better result. In every instance the chief cause of failure was the false assumption that the forestry interest would take care of itself.

True, our State owns no forests, yet it would be as preposterous to maintain that consequently there is no need of, or use for educated foresters, as it would to say, as the State owns no agricultural lands, it has no use for educated farmers.

Men like Cassius M. Clay advocate that, by the right of eminent domain, every State should prevent the ruthless destruction of woodlands, and cause certain denuded regions to be re-afforested; even more, that it is *the duty* of the States to do this. To intelligently and successfully effect such measures, there is a need of a corps of men educated in all the branches of forestry.

Thousands of acres of land are lying waste in the State of Ohio, and are thus practically unproductive. If these were turned into artificial forests, not only the respective owners but the State at large would be benefited. The State can promote this in no better way than by furnishing the means to educate men who will become instrumental in turning this now *unproductive* into *productive* lands, and in developing a rational system of forest-management; and the State may do this *by establishing a forestry department at our agricultural college.*

In the meantime the Bureau should continue to collect facts of interest to forestry, and to make them known through the annual reports.

A JOURNEY OF THE OHIO STATE FORESTRY BUREAU THROUGH A PORTION OF CLINTON COUNTY, O.

On the 8th of July, 1887, at 7:30 A.M., standard time, Dr. John B. Peaslee and myself left Cincinnati for Wilmington, by the Columbus Midland Railway, to attend a meeting of the Ohio State Forestry Bureau, to be held at that place.

I pass over the description of the pretty hills and fertile valleys, with the many flourishing villages and towns, and the often very prettily situated, handsome country homes on both sides of the road. Nor shall I speak of the barren hillsides and those several human habitations around or near which no tree or shrub is to be seen. Suffice it to mention that in not a few places the need of a frequent and prolonged observance of Arbor Day is plainly visible.

The effect of the prolonged drouth was visible everywhere. The corn-fields and pastures were badly in need of a good rain.

The distance between Cincinnati and Wilmington is fifty-six miles; we traversed it in about two hours.

Upon our arrival we were met by Mr. Leo Weltz, who informed us that the meeting would not be held at Wilmington, but at the residence of Mr. C. B. Vanniman, about five miles east of Wilmington.

As the carriage which was to convey us thither was in waiting we had neither time nor opportunity to see anything of Wilmington beyond what was to be seen from the station, and this is, as everybody who has been in Wilmington can testify, not well calculated to impress one favorably, except the school-house south of the railway station and the high school building, an elegant structure, southeast of the station. We thus entered the vehicle, and away we went on a solidly constructed and well-kept turnpike, one of the best to be seen in the State of Ohio.

Mr. Weltz proved himself to be an excellent guide; he seemed to know every foot of ground we traversed, and the owners thereof. When we were about a mile from town we were informed that all the land on both sides of the road belonged to Mr. Rombach. Reader, if you wish to see a well-kept farm, taking the term "well-kept" in its widest meaning, go and see Mr. Rombach's. It embraces about fifteen hundred acres, is laid out in sections, all well fenced. If you want to see good live stock in a good condition this is the place to visit. We saw but little of it, but what we saw reminded us vividly of the seven fat cows

which Pharaoh of old in a dream saw emerging from the Nile. On the north these extensive fields are bounded by the railway, on the south by what from the distance seemed to be a well-wooded forest, which, we are told, is a part of Mr. Rombach's estate. A visit to these woods, profitable as it might have been, was not on the programme of our tour.

About two and a half miles east of Wilmington we drove through a lane to a small grove of black walnut, intermixed with kickory trees, planted by Mr. Rombach. It embraces perhaps five acres. The trees are thriving well, and range in age from eight to twelve years, with a few of perhaps fifteen years; are mostly raised from nuts planted where they grow. We did not measure any, but to judge from appearance the oldest and largest were about eighteen inches in circumference, while the youngest would measure about eight inches.

The grove made a fine appearance, but, looked at from a forester's stand-point, it has one serious defect; the trees are too far apart. If the grove contained double the number of trees, or even more, the individual trees would have been forced to a greater height, and instead of developing into a fine, leafy head or crown, they would have made a long, straight trunk, which is the great desideratum in timber-trees. As the trees now are they would be admirable in the park, or the lawn or on the roadside where shade and beauty of form is the chief or only object.

Having returned to the road we again drove eastward. From about this grove east the roadside is partially lined with forest-trees, among which the Lombardy poplars attracted our attention, because it seems rather strange to see these trees planted in preference to a great number of indigenous trees, which are more beautiful and more valuable. Elms, maples, blackberry trees, black walnut, and about five varieties of oaks were observed on the roadside or on the fields near the road.

Now as to the alleged evil effects of trees on the roadside. Upon the road I saw none. That portion of the road the sides of which were lined with trees was fully as good, if not better, than the remaining portion. The only improvement of the road that might be suggested is that, on Ohio's next Arbor Day, the entire road be lined with trees. There can probably be no objection to utilizing fruit-trees in making the proposed improvement. Trees along the roadsides are an ornament to the landscape and a great benefit to the wanderer.

None of us did, as far as I know, take any note of time; I can therefore not tell how long it took us to drive from Wilmington to the farm of Mr. Vanniman. Be it sufficient to say that we arrived there. A little later Mr. Vanniman, who had gone to Melvin, the

nearest station on the Columbus Midland Railroad, to meet the Rev. James Poindexter, the lately-appointed member of the Forestry Bureau, drove up.

Mr. Poindexter, who is pastor of a church in Columbus, is a man of medium size, sixty-seven years of age, wears long, silver-white hair, and is, in spite of his advanced years, strong and very active, which latter qualities he attributes to his temperate habits; for he does not drink anything stronger than tea and coffee, and does not care for that when he can have plenty of good water. He used to take great delight in smoking a good cigar, but cares for it no more. Mr. Poindexter is thoroughly convinced of the great importance of the Forestry Bureau, and will do anything that may tend to advance the good cause for which we assembled.

Immediately upon his arrival the Board went into session. About 2 o'clock the Board adjourned. We at once took seats in the carriages which were waiting and were ready to start, when an incident worthy of notice occurred. Mr. Peaslee, who had been very much pleased at finding among the great variety of trees that had been planted about the residence of Mr. Vanniman two specimens of the mountain ash, which, he said, were very abundant and grew to perfection about his old home in New Hampshire, asked Mr. Vanniman for the name of this place. "It has," he replied, "not yet been named, and should be pleased to have you gentlemen name it." Among the several names which were proposed it was at last named Tharandt.

It may not be generally known that Tharandt in Germany is the seat of the oldest and one of the most renowned forest academies in the world, and that this academy, through its illustrious director Oberforstzath, Dr. F. Judeich, planted in this forest a group of *Catalpa speciosa* sent by me early in 1882, which, as Dr. Judeich wrote, "shall forever be sacred to the 27th of April, Ohio's first Arbor Day." In due recognition of this fact, and to return the compliment which that renowned academy paid to the State of Ohio, the Ohio State Forestry Bureau named the residence of Mr. Vanniman Tharandt.

We then bade farewell to Tharandt, O., and, accompanied by Mr. Vanniman, we went further east and came to the farm of Mr. C. E. Custis, which the Bureau afterward called Catalpa Grove.

Southwest of his residence and along the road Mr. Custis had planted a grove of *Catalpa speciosa*, in which he evidently takes great pride. We found this gentleman busily engaged among his trees. The grove occupies about two and one-half acres of ground, which is entirely level, like all the land of the farms through which we passed. It was planted at three different periods, namely, 1882, 1885 and 1887.

The trees planted in 1882 were raised from seedlings, then mostly one and a few two years old. Of all the trees planted not one was lost. Unfortunately they were not planted as closely as they should have been. Planted as they are in rows fourteen feet apart and twelve feet apart in the row, the trees, having the full benefit of light and plenty of room to expand, developed strong side branches, and pruning became necessary. The trees made a good growth, have an excellent head, but will hardly make good timber. Upon being asked what money value he put on a single tree, Mr. Custis said that he had never considered that question, but one dollar apiece would not buy them.

The next section was planted more closely, the rows being seven feet apart and the trees seven feet apart in the row. They were planted in 1885, were then one year old, are therefore now in their third year, and have reached a height of from three to four feet. Here, too, pruning became necessary, showing the necessity of still closer planting. To shade the ground and to thereby prevent the growing of weeds, beans were planted among the trees, evidently with good result. It is worthy of note that also in this section no tree was lost.

On the third and last section Mr. Custis is raising seedlings for transplantation next year. Seeds were sown in rows between corn this spring. The young seedlings are now about three inches above ground, and appear to be in a good and healthy condition.

On the way to our next station, which was Mr. Frank Stevens' grove of black locusts (*Robinia pseudacacia*, L.,) we had an opportunity to see the ruins of a once beautiful forest, destroyed by a cyclone which swept over this region on May 12, 1884. It was a sad spectacle. Oaks, hickories, elms, etc., of from one to two feet in diameter, were uprooted or broken at two, four, six or more feet above the ground, by that hurricane, which must have been fully as furious as that which a year later wrought that dreadful destruction at Washington C. H., in Fayette county.

Mr. Frank Stevens' grove of black locusts occupies a small area of perhaps one acre of ground. The trees, which stand very close to one another, almost forming a dense thicket, are from twelve to fifteen feet high, with trunks of about four to eight inches in circumference, and are entirely free from injuries by the locust borer.

About a mile west of this is another grove of black locusts belonging to Mr. Robt. Skimming. This plantation is, I think, about two years older than that of Mr. Stevens', and is planted less closely. The rows about six feet apart, and the trees about six feet in the row.

The grove occupies an area of perhaps two acres, and contains not a single tree which is not badly infested with the locust borer. The

entire grove presented the appearance of decay. Some trees were, what is familiarly called, honeycombed, so that even a slight bending would break them.

There can be no doubt as to the fact that the entire grove is irrevocably lost, and that even if through much labor some trees may be saved, it would hardly be worth the time and expense of such an attempt.

As frequent inquiries are made regarding the locust-borer, about which there seems to be a diversity of opinion, a few words as to its natural history will not be considered out of place.

This insect, which entomologists call *Clytus Robinia* (Foster), *Clytus pictus* (Harris), is a capricorn beetle, velvet black, ornamented with tranverse orange yellow bands. These beetles appear about the beginning of September. The female deposits her eggs in the furrows and crevices of the bark. The eggs are soon hatched. The grub then bores into the bark, devouring the inner portion thereof. During the winter they are in a torpid state. Early in spring they resume the work of destruction by boring through the sapwood even into the heart of the tree. Towards the end of July, about the 20th, they are transformed into pupæ, out of which they come forth as beautiful beetles early in September.

Taking into consideration that there are thousands of these larvæ now in that grove, which to kill by application of washes or by hand would be next to impossible, it would seem that the best thing to be done would be to cut every tree in that entire plantation, and to burn them before the changing into a perfect insect takes place.

This was the last plantation we had time to visit. The road on which we returned to Wilmington was fully as good as that on which we traveled in the morning. The fields on both sides of the road showed evidence of great fertility and good husbandry. It is worthy of remark that on the entire tour we did not see a single silver poplar, which has become a nuisance in and around Cincinnati. And of that ill-reputed native of China, called *Tree of Heaven* or *Ailanthus*, we saw two specimens, which we consider just two too many.

Arriving in Wilmington but a few minutes before our time to leave we had no opportunity to either verify or correct the impression which the place made upon us in the morning.

ADOLPH LEUE'.

A JOURNEY IN THE WOODS OF BUTLER COUNTY, OHIO.

By ADOLPH LEUE', *Secretary*.

The oldest, best, and indeed only reliable work on Forestry of Ohio is about exhausted. Upon special inquiry it has been ascertained that there is no perfect copy in existence. But there are a number of volumes in various parts of the State. These are, however, more or less dilapidated, so that it is only by comparing two or three and sometimes more volumes that we are enabled to find the meaning of certain passages.

An attempt to prepare a new edition has met with but little success and less encouragement. Some of the editors have died in the midst of their labor, and others have abandoned it.

In the course of time the old edition will grow less, which will make the new revision still more difficult. The reader will therefore not wonder that learning of the existence of a tolerably well-preserved volume about seventeen miles north of Cincinnati, not only aroused my curiosity but created a very strong desire to see and to spend a few hours in the examination of the same.

My esteemed friend, Dr. John B. Peaslee, whom I acquainted with this fact, and my intention to see this old volume, was so much interested in the matter that he concluded to go with me.

The first fine day was set apart for the journey. On the morning of the 28th of August, 1887—lazy people were still sleeping, and the pious prepared to go to church—we took the train on the Cincinnati, Hamilton and Dayton Railroad and sped towards the previous volume.

At Jones Station we left the train and hurried northward on a rather dusty road, which, it is to be hoped, will be so no more, when the silver or white maples planted on its side shall have attained sufficient size to give shade. After having traveled about a mile and a half we reached the home of Mr. John Windisch, who, having learned of the object of our visit, informed us that the treasure we wished to see was not there, but on his Vinton-road farm, about three or four miles distant.

While we were shown his well-filled barn, and his very conveniently arranged stables, etc., a phaeton was brought out, which Mr. Windisch said would convey us to wherever we wished to go. And a few minutes later we found ourselves again on the road, Mr. Windisch, jr., driving. The corn-fields, upon which the severe drouths of this season seemed to have had no effect, gave evidence of good farming as well as of the richness and fertility of soil in this region.

The absence of trees and wood-lands on either side of the road was painfully conspicuous. A small cluster of trees surrounding the farm-houses, and at greater or less intervals, single rows of from four to eight black-locusts either dead or dying, here and there a sycamore, a black-berry tree, a sugar-maple, and even a solitary black-walnut was all that was left of the dense woods, which, less than a hundred years ago, covered the whole region.

At last we reached the place of our destiny. We left Vinton road, and turning east, we passed the well-built farm-house, and there before us we beheld a magnificent grove covering about eighteen acres, fifteen of which are in natural woods.

This is the great volume we wished to see and to study; for, be it remembered, the best and most reliable work on forestry is the forest. This special patch is, as might be expected, not a forest primeval, for here, too, decaying stumps indicate the woodsman's track. Yet there are trees there which measure about three feet in diameter, with trunks of from seventy to one hundred feet high, mostly sound. The predominant trees of this grove are beech, hickory and sugar-maple; besides these, there are some very fine specimens of white and red-oak trees, and two or three of Kentucky coffee-nut-trees of an exceeding height; one of the latter had been struck by lightning and shows signs of decay. Although cattle have occasionally been allowed to roam through this grove, there is quite a vigorous new growth of young trees coming up, which should be protected. To give this young growth a better chance for development, the old trees, which have about reached maturity, should be removed. Under no circumstances should the ground now occupied by this grove be utilized for any other purpose except forestry. Paradoxical as it may appear to some, I can not suppress my fears that our extensive fertile fields, and the general adaptedness of the land of our State for agricultural purposes, which we are accustomed to look upon as being a great blessing, will ultimately become our curse. The value of our timber, together with the great fertility of our soil, is too great an incentive for the average farmer to remove the trees and to utilize the land for any other except forestal purposes. In the interest of the future prosperity of our fair State, one is tempted to wish that

there were more portions of Ohio unfit for agriculture proper. Mr. Windisch is exceedingly fortunate in having such a portion of land not well adapted for the production of ordinary farm crops, (it would be better if it were about five or six times as large as it is), and it is to be hoped that he will take advantage of the opportunity to distinguish himself as a practical forester.

On either side of this natural wood is found a plantation of black-locust trees, Mr. W.'s attempt at the new edition of the work on forestry, spoken of at the beginning of this chapter.

About ten or fifteen years ago, and even earlier, quite a number of black-locust plantations were formed in south-western Ohio. These plantations, though they were all on a small scale, may be considered as the first efforts at practical forestry, or the growing of forest-trees for profit. That these plantations did not prove profitable to the planter, is to be regretted. Of all those plantations there is probably not one which is not more or less injured by the locust-borer. One of Mr. Windisch's groves occupies about one acre of ground, and the other perhaps three. The trees in one are fourteen years old, in the other ten. In each about 50 per cent. are dead; 25 per cent. will be so within a year or two, and the remainder, some of which are from 6 to 7 inches in diameter, may, perchance, live for several years, but none will become an old tree, for there is not a single tree free from injury by the borer. The so-called leaf-eater was observed on but two trees.

Although these early plantations resulted in great loss to the planter, they are of value to the science of forestry, in that they teach us how *not* to proceed. And this is a gain.

There are, as far as could be learned, no *clear locust plantations* in this section of the State which are not infested by the borer. I have on previous occasions demonstrated the fact that this insect (*Clytus pirtus*, also called *Clytus Robiniaë*) delights in sunshine, and abhors darkness and shade. The very thin foliage of the locust tree does not produce sufficient shade, however closely they may be planted, to disgust the borer; therefore, *clear locust plantations are a failure*.

But the Black Locust is too valuable a tree to thus lightly abandon its culture. How to proceed in the cultivation is a question which remains to be determined by a series of experiments, for the performing of which we stand badly in need of Forestal Experiment Stations. In the meantime, it is well enough to form plantations consisting of Catalpa, Ash and Black Locust. I propose this mixture because the Black Locust grows more rapidly than the other two mentioned species, and will thus have the sunlight from above, and having a thin foliage, it will not materially injure the other trees by its shade. The Catalpa

and the Ash have a foliage sufficiently dense to shade that portion of the Black Locust which the borer generally infests.

But these ruined plantations teach another important lesson, namely : *In forming the plantation, plant closely, and not as far apart as you would have the trees stand twenty years or more hence.*

In Mr. Windisch's plantation the trees were set out 7 by 7 feet. Planting at such a distance induces the seedlings to develop side branches, which often necessitates pruning, an operation which should be rendered unnecessary in forestry. Close planting will prevent the development of larger branches, and the young trees will form a straight trunk, which is indispensable in timber trees.

The exact distance at which the different forest-trees should be set out, remains to be determined. At present various distances are recommended. As these recommendations do not rest upon the sound basis of comparative experiments, but upon speculations only, they should be accepted with great precaution, and not as infallible truths.

It was already past midday when we left this grove; and as we approached the farm-house already mentioned, Mr. Paslee turned around, and, with a lingering glance upon the woods we had left, he seemed to bless the man who had "spared" this one of "God's first temples," and then looking upon that robust man, who was opening the gate, and who might pose for a woodman, he whispered something like

"Thy ax shall harm it not."

About one o'clock we arrived at the Windisch homestead. Hearing the account of the condition of his Locust plantation, Mr. John Windisch was anxious to see one of those dreadful enemies. Now, near the fence there were standing a few Locust trees about five years old, which showed unmistakable evidence of being infested by the borer. A hatchet and a hand saw were brought out, and in a few minutes one of the trees was cut down. A piece of the stem one foot long was sawed off and split, and in a short time we extracted from that piece four nearly perfect beetles (*Cytus Robinix*), each having, as a larva, made a hole of from four to five inches in length, with a diameter of one-eighth inch. Considering now that a single tree contains perhaps from twenty to forty or more of such insects, and each making such an ingress into the wood, the extent of injury done to the plantation in one single year is most fearful to contemplate.

Suppose the trees were planted eight by eight feet apart. One acre would contain 680 trees, which, at the age of 18 years, would furnish at an average, one railway tie and two fence posts each, or 680 ties, and 1,360 fence posts to the acre. Railway ties of the Black Locust will

bring at least thirty-five cents each, or two hundred and thirty-eight dollars for the whole. Fence posts are about seventeen and one-half cents each. The 1,360 posts would bring two hundred and thirty-eight dollars. The receipt for ties and posts would amount to four hundred and seventy-six dollars. Branches and tops for stakes and fuel will pay for the labor of cutting and hauling. This is the very lowest estimate of the actual value of a Black Locust grove in a sound condition. To ascertain the loss sustained by the injuries of the borer, we must deduct the value of the grove in its present sad condition. As timber the wood is useless. As fuel, it would at best furnish nineteen cords of wood. At four dollars a cord we would have seventy-six dollars per acre, which places the loss at four hundred dollars per acre. If we now suppose that within the State of Ohio there are two hundred acres of Black Locust plantations, which, it will be admitted, is a very low estimate, then the total loss would be \$80,000. This, however, is only a very small beginning at practical forestry, and under existing circumstances it may be confidently expected that similar losses will occur in other attempts.

As yet no practical means of combating the evil are known. The remedies recommended, such as lotions of different kinds, may be applied in limited cases, but on large plantations these remedies are utterly impracticable.

But I must leave this question and return to my narrative. While we were examining the ravages of the borer on the tree we had cut down, we were informed that dinner was ready. It is needless to say that, by this time, it was about 2 P.M., we were also ready for dinner, and that our kind host's Bavarian cook had fully anticipated this, as was plainly indicated by the great abundance of good things placed before us.

After dinner we inspected Mr. Windisch's ornamental plantation on the spacious ground surrounding the magnificent mansion. No fault can be found in the choice of varieties, though a little change in the grouping might, in the course of years, be necessary.

It must have been about 3 o'clock when the phaeton, in which we rode in the morning, and which was to convey us to the natural grove belonging to Mr. H. Muhlhauser, was brought out again. Now, a phaeton is a light-wheeled vehicle, which is certainly ill-adapted for four full-grown men ranging in weight between 130 and 180 pounds. I had viewed it in the morning with some suspicion, and confess that I was a little alarmed when Mr. Windisch, sr., asked the question, who of us was the heavier? When it was ascertained that Mr. Peaslee was weightier by more than 20 pounds, he was asked to take the front seat, which he did. Mr. Windisch, jr., and myself took the back seat,

and Mr. John Windisch, who was to act as driver, took the seat along side of Mr. Peaslee. We started. The sight of the fields and trees soon engaged my entire attention, so that my original fear about the phaeton was allayed. At Jones' Station we passed the railroad and proceeded on a country-road in a southerly direction. A little north of a place called Muhlhauser's, we turned into a lane, and after a ride of about one mile left the phaeton, and walking over a field reached Mr. Muhlhauser's natural woods, a really magnificent grove, consisting chiefly of stately beeches interspersed with sugar-maples, hickories, oaks, ash, a few elms, and one coffee-nut-tree. The whole presented the appearance of a beech Hochwald (seed-forest). Here, as in the forest seen in the morning, an undergrowth of young rock-maples, beeches, chestnut-oaks, and a few other trees are coming up. Within a few hours a wagon-load of choice young seedlings might be taken up late in autumn for transplanting into nursery rows, provided cattle be excluded.

West of this wood, and adjoining it, is another, in which the underbrush is so very dense that, at places, it is absolutely impenetrable. We followed a foot-path and went into it quite a distance. Briers and other forest-weeds grow very luxuriantly there and smother the young trees, which would come up and take the place of those now ready for the ax. Such a neglected wood-land, which painters and poets would take great delight in seeing, fills the heart of the forester with grave apprehension. Should a fire break out in this wood, it would be next to impossible to extinguish it. This thick underbrush, with the dead branches of wood hanging in it, would so feed the flames, that nothing could prevent the complete destruction of this and the adjoining forest. When will our Legislature begin to enact laws that shall compel owners of wood-land to reduce the danger of forest-fires?

Mr. Peaslee, who is an ardent admirer of flowers, had, on our way, gathered an immense bouquet of forest-flowers, which induced some one to ask him whether he had a contract for decorating Music Hall.

As the time for our return to Cincinnati was nigh, we left the woods, took seats in the phaeton and hastened towards Muhlhauser's Station. As we were leaving the main road and turned towards the station—a crack—and by the law of gravitation one of us found himself on the ground. The right hind-wheel was broken. Thus ended our journey into Fairfield township, Butler county, State of Ohio.

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In consideration of the fact that we, as a people, are just beginning to feel the great importance of due attention to forestry, it is not surprising that there is a great lack of information in matters pertaining to the art and science of raising trees for shelter, for ornament and for profit. It is, however, encouraging to notice a constantly increasing desire for knowledge in all branches of forestry. To facilitate the study of forestry, and to stimulate the directors of libraries to add to their collections of works on forestry, at least all the public documents, which almost any library may readily obtain by simply asking for the same, the librarians of public libraries were asked by letter to furnish for publication in this report a list of books on forestry found in their respective libraries. Most of these functionaries did not reply, quite a number replied by stating that they had no works on forestry, while a few courteously furnished a complete catalogue of all the books they have on this subject, which I hereby gratefully acknowledge:

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TOLEDO, OHIO, *September 7, 1887.*

MR. LEUE'—*Dear Sir:* In reply to your request for a list of works on *Forestry*, in the Public Library of Toledo, I send the following:

By Brown, Dr. J. C., of Edinburg, Scotland:

Finland, its Forests and Forest Management.
 Forestry in Norway, etc.
 Forestry in the Mining Districts of the Ural Mountains.
 Forests of England, and Management of them in By-gone Times.
 Forests and Forestry in Northern Russia, and Lands Beyond.
 Forests and Forestry in Poland, Lithuania and the Ukraine.
 Forests and Moisture, or Effects of Forests on Humidity of Climate.
 French Forest Ordinance of 1669.
 Modern Forest Economy.
 Pine Plantations in the Sand Wastes of France.
 Reboisement in France, or Records of the Replanting of the Alps.
 School of Forest Engineers in Spain.
 Schools of Forestry in Germany. (In all of Dr. Brown's works, eight volumes).

Eggleston, N. H.—Hand-book of Tree Planting.
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 Second Annual Report, 1886, by A. Leue'.
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Respectfully,

MRS. F. D. JERMAIN,
Librarian.

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 TREE PLANTING ON STREETS AND ROADSIDES.

Although the planting of trees on streets and roadsides is, strictly speaking, not a question in forestry, it is, nevertheless, one of the most powerful means of advancing the cause of forestry, inasmuch as it stimulates tree-planting, which, if properly conducted, will indicate what may and what may not be grown in a given region. In due recognition of this, tree-planting on streets and roadsides should have the fostering care of all friends of forestry. As this subject has been treated quite extensively in our last annual report, we confine ourselves to the giving of a few additional extracts from some of the best writers on this question.

Francis George Heath, Esq., an authority recognized both in Europe and America, says :*

“Why is it that reforms which are healthful and beautiful, and in every way desirable, are so slowly effected in this age of civilization and progress, of culture and freedom? People are content to go on from day to day, from week to week, from year to year—nay, sometimes for a generation—in irksome discomfort, and under conditions which injure the body, and sorrow, depress, and dwarf the mind, without even a thought of the simple expedients, by the adoption of which the entire scope and tenor of life might be changed. And usually when, by the very slow progress of ideas something has been discovered to make life a little more pleasant, we hail it as a ‘happy thought’ or a great discovery, and seldom reflect that it is our want of thought which has prevented its earlier adoption. A hundred instances of the very slow development of our ideas could easily be given; but all except one would be beside the immediate purpose of this chapter, which is to inquire why it is that we have been content, and still, in too many instances, remain content, with the unloveliness, the unhealthiness, the ugliness of so many of our cities and towns?

“There has happily been something like a popular awakening to the ugly aridness of our towns during the last two or three years, and this change in public feeling has led to the conviction that something might be done to make the places where we spend by far the larger portions of our lives somewhat more enlivening and attractive by the planting of trees in public thoroughfares. But how little has actually been done to carry out so delightful a reform! Indeed, in no instance that has come within the author’s knowledge, has it been contemplated anywhere by public authorities† to do more than plant one or two of the broadest and longest of

*Our Woodland Trees, London, 1878, p. 261, etc.

†There are happily a few exceptions in this country, notably the city of Washington, D. C.

town thoroughfares, or to make the very cautious 'experiment' of filling up a few odd corners and angles by planting trees. Money, though spent with little regard to economy in other and far less worthy objects, is grudgingly doled out for the purpose of tree-planting in a few town streets; and even the small sums that have thus been spent have in too many instances been secured for their excellent object only by the earnest and persistent exertions of large hearted individuals amongst our local governing bodies, and in spite of selfish, obstinate and narrow-minded resistance.

"But why, it may be asked, can not there be a healthy and spontaneous expression of public opinion on this subject? Why can not it be recognized that townspeople would immensely gain both in health and in pocket by an extensive adoption of town tree-planting? Why will not people see that much of what they spend in poor-rates might be saved by the introduction of more trees into towns. Trees are sanitary agents, more efficient and more persistent than public officers of health. They absorb the noxious compound known as carbonic acid gas, reduce it to its simple and healthful elements of carbon and oxygen, assimilate the carbon by making it contribute to their substance, and hence to their life, vigor and beauty, and give back pure oxygen—our vital air—for the healthfulness and pleasure of mankind. How beautiful, indeed, is this function, whereby a deleterious gas is turned to double advantage of human beings by the operations of trees! We not only benefit by what is returned to us, but by what is retained to aid the tree growth; for, as the carbon assimilated by the tree is made to contribute to the protection of its most beautiful, most useful and most enduring qualities—to the charm of its graceful foliage, to clustering profusion of its fruit and to the solidity and stability of its timber, so, for the same reason, it ministers to the further enjoyment of man by providing him with food in health, with medicine in sickness, with shelter to temper the heat of the summer sun, or the icy chill of the wintry wind, and with that inexpressible sense of pleasure conveyed to the mind through the eye by the presence of noble stem and spreading of graceful twig and clustering foliage."

While in some towns and cities of Ohio a very laudable beginning at tree-planting on streets has been made, there are still many places which are conspicuous by the entire absence of trees on streets. In direct contrast to such stands our National Capital, the city of Washington, which has duly become famous for its beautiful avenues of trees. "In no city in the United States, and perhaps in the world, has arboriculture, as a means of urbane embellishment, been more intelligently employed and with more gratifying results than in Washington," writes a correspondent of the *Philadelphia Times*.*

"The favorable spring weather has developed all the natural beauties of the choice selection of deciduous and evergreen trees and shrubs which beautify not only the great parks, squares and circles of the capital, but the curb lines of the broad avenues which sweep up in beautiful ranges of vision towards the massive public edifices or form magnificent vistas along streets busy with the activity of trade. The work of the Park Commission, under the auspices of the municipal government, composed of W. R. Smith, superintendent of the botanic garden; William Saunders, superintendent of the gardens of the Department of Agriculture, and John Saul, began in 1872, thus affording fourteen years of practical test of the sagacity of their plans, and the fruits of their labor. Washington, even in this brief space, surpasses Paris, Vienna, or Berlin in the number, variety and beauty of its trees.

*Quoted by the Colorado Farmer, August 12, 1886.

"In the commencement of their work the Commission selected trees possessing stateliness and symmetry of growth, expansive foliage, early spring verdure, and autumnal variety of colors. In order to secure a reliable and abundant supply of the best varieties and healthiest growth for the future, a propagating garden was also established in one of the public parks, occupied by the penal and reformatory institutions of the municipality, which now contains sixty thousand trees of the varieties used, in different stages of growth, from seed, to four and five years.

"The returns of the superintendent and his assistants report ninety thousand trees along the curb lines of the avenues and streets, in thriving condition, and ranging from five to twenty-five years' growth, which includes the old trees of common varieties, generally Cottonwoods, which were standing when the systematic arboricultural adornment of the Capital began. The number stated does not embrace the artistic groupings and groves of trees in the seven hundred acres of beautiful public parks of the city.

"Some idea may be formed of the extent of the lines of the trees now shading the avenues and streets, when it is stated that if all the trees were stretched out in two rows they would form an unbroken vista from Washington to Baltimore, Philadelphia, New York, and nearly half way to Boston, or if in a single row, would reach from Washington to within 150 miles of Chicago. The annual plantings add from two to three thousand to the number of the year before. The varieties which have been found best suited to streets are: the Ash, Catalpa, Coffee, Cypress, Elm, Maiden's-hair, Gum, Horse-chestnut, Linden, Locust, Maple, Oaks, Poplar, Sycamore, Tulip and Willow, according to localities.

"The plantings have also been made with proper regard for certain objective features; for instance, the famed 'Unter den Linden' of Berlin is less than a mile in length, and now more appreciable in history than in reality. The 'Unter den Linden' of the American Capital is Massachusetts avenue. This superb sweep of residences, statues, and fountains, and even through its more sparsely settled portions to its terminus on the banks of the Anacostia, presents four miles of vigorous and stately young Lindens, twenty to thirty feet high. The connections with streets and avenues similarly planted will, within a few years, give the 'Unter den Linden' of Washington a circuit of twelve miles. The other avenues and streets, whether devoted to business or residence, have also their characteristics of foliage. The Maples and Catalpas of Pennsylvania avenue, the Elms of New Jersey, New Hampshire, New York, and Delaware avenues, the Tulips of North and South Capital streets, the Meridian of the United States, the Maples of Maryland, Connecticut and Vermont avenues, and the Poplars of Virginia avenue give but a partial idea of what the trees of Washington will add to the landscape effects of the nation's Capital in another decade."

For the benefit of those city authorities as well as private individuals, who may contemplate following the noble example of the city of Washington, I quote from the Washington correspondent of the *Cincinnati Times Star*.[†] The writer says:

"The history of a tree depends almost wholly upon the skill and pains bestowed upon it at planting. A street having been designated for setting, holes are dug at intervals of twenty-five or thirty feet, according to the variety of the tree, from which three cart-loads of dirt are removed and carted away. The trees are then brought from the nurseries in a wagon especially built for that purpose, care being taken that the roots shall not become dry. The tree is deposited in the hole,

[†]October 31, 1885.

which is then filled with three cart-loads of good soil, prepared and enriched for that purpose. As each tree involves the handling of six cart-loads of soil, which must often be conveyed long distances, and at an average expense of 50 cents per load, the main expense is not in the tree itself, but in the planting.

"It is, also, often needful to water the newly-planted trees during the dry heats of summer. With such careful and scientific treatment, the loss reaches the figure of two per cent., and the entire cost of an established tree is found to be less than three dollars.

"The favorite and best shade tree, evidenced by experience and popular approval, is the Maple, of which seven distinct varieties are planted.* Most of them are slow growers, but do not easily break, are seldom troubled with insects, and offer a symmetrical and pleasant aspect. For wide avenues, where there is plenty of room, preference is shown for the Sycamore—a favorite shade tree in Europe, though not so popular here—and the Linden and Elm."†

*The seven different species of Maple used for street-planting in Washington are:

<i>Common Name.</i>	<i>Botanical Name.</i>
Box Elder,	Acer negundo.
Sugar Maple,	Acer saccharinum.
Sycamore Maple,	Acer pseudo-platanus.
Soft or White Maple,	Acer dasycarpum.
Black Maple,	Acer nigrum.
Red Maple,	Acer rubrum.

A. L.

†The following, with the seven species of Maple, completes the list of the street trees of Washington:

<i>Common Name.</i>	<i>Botanical Name.</i>
American Linden,	Tilia Americana.
European Linden,	Tilia Europaea.
Sycamore or Bottomwood,	Platanus occidentalis.
Sycamore (European Plain tree),	Platanus orientalis.
American Ash,	Fraxinus Americana.
American Elm,	Ulmus Americana.
Winged Elm (Whahoo),	Ulmus alata.
Slippery Elm,	Ulmus fulva.
Corky White Elm,	Ulmus racemosa.
Carolina Poplar,	Populus monilifera.
Lombardy Poplar,	Populus dilatata.
Grecian Poplar,	Populus Graccea.
Turkistau Poplar,	Populus simonivensis.
Catalpa,	Catalpa bignonioides.
Japan Catalpa,	Catalpa Kempferii.
Laurel-leaved Willow,	Salix.
Sweet Gum,	Liquidambar styraciflua.
Maiden's-hair tree,	Salisburia adiantifolia.
Cypress,	Taxodium distichum.
Weeping Cypress,	Taxodium sino-istic.
Pin Oak,	Quercus palustris.
Willow Oak,	Quercus phellos.
Swamp White Oak,	Quercus bicolor.
White Oak,	Quercus alba.
Tulip tree,	Liriodendron tulipifera.

A. L.

COPPICE AND TIMBER GROWTH.*

By B. E. FERNOW,

Chief of the Forestry Division, Department of Agriculture, Washington, D. C.

Maturity, *i. e.*, the time when trees will bear seed often and plentifully, with slow growers generally, sets in when they have attained their maximum height accretion; quick growers mature earlier: Shallow soil, warm exposures, or increased influences of sunlight accelerate maturity, whilst the richer soils, northern aspects and denser growths retard the maturing. For every species and locality, the time and periodicity of seed years must be determined from experience.

The rule of careful forestry requires us, above all things, to keep the soil under cover, to expose it to the drying influence of the sun and wind as little as possible. This rule is violated oftener in the coppice system than in the timber forests with long rotation.

Mass accretion in a forest not only shows a different rate at different ages, but *ceteris paribus* shows a difference of rate according to the origin of the trees; the maximum of yearly average *mass* accretion of a well-stocked forest occurs before the time of maturity, and is directly proportionate to the height accretion, so that the masses of two tracts of similar character are nearly proportionate to their heights. From this experience alone, it may be deduced that the rate of mass accretion differs considerably in coppice and timber forest. In the former, the greatest annual *height* accretion is observable in the first year, especially from old stocks, but ceases soon. The average annual *mass* accretion may, therefore, reach its maximum a few years after the new growth is started; yet for other reasons affecting the utility of the crop, the longer rotation of twenty to thirty years is preferable when the yearly average mass accretion just begins to decline.

In seedlings, the *height* accretion of the first year is inconsiderable, and increases in rate from year to year; it reaches its maxim some time before maturity, when it remains stationary for awhile, then gradually sinking towards maturity. Consequently, on that part of the timber which will remain to the end of the rotation, the maximum yearly average *mass* accretion is attained near the time of maturity, when it remains stationary for some time only; with light-needing species and especially on poor sandy soils it sinks rapidly. In this system of management, a considerable part of the original growth may be utilized by thinning interlucations, and should not be forgotten in the estimates of the amount of wood produced. Unfortunately for the calculation, the amount so available can hardly be determined beforehand, because it depends not only on the greater or less original density of the growth, but also on the amount of nurse-trees held over from a former rotation; on the quantity of soft woods, birch, poplar, willow, etc., which have to be removed; on an earlier or later beginning and frequency of interlucations, which last considerations essentially influence not only the amount of material utilized in the interlucations, but, also, determine the slower or quicker development of the principal growth. Doubtless, the greatest mass of this material from thinning may be expected during the period of greatest *height* accretion, and poor soils, which are not able to sustain and develop as many specimens per acre to the end of the rotation, will yield a larger amount of this material in proportion to the main crop.

* From Forest Leaves for September, 1886.

We are cutting, burning, and wasting from thirty to forty billion feet yearly now, and will shortly cut much more, not only in proportion to the increase of our own population and settlements, but also in accelerated proportion, as the export European forest resources declines, and the *vastness* will disappear at no distant day, and before a full-sized timber forest can be grown.

There will not be a timber famine; the law of supply and demand, and the forests of countries as yet undeveloped will take care of that; but a scarcity, high prices, and injurious influences on all industries using wood cannot but be felt soon.

The same acres will not cut the same amount, robbed, as it were, of their natural facilities of reproduction by human interference, without equivalent after care bestowed upon them.

Do not think this warning untimely, judging from the past. The world is developing at an accelerated ratio, the competition and the demands on all the industries require more and more close application of scientific principles, economy, and husbandry; the slipshod ways of the good old times are growing more and more unprofitable.

TRANSPLANTING OF TREES FROM WOODS.

‘No more arbor-days for me,’ said a man, meeting an acquaintance in the city. Upon inquiry as to what induced him to form such a rash resolution, it was ascertained that on Arbor-Day, 1883, he had set out a line of trees along the roadside bordering his farm. “Are you sure,” his friend asked, “that the trees were alive when you planted them?” “Sure? Yes, indeed, for in the morning I took them out from the woods and planted them in the afternoon of the same day.”

As the soil was congenial, and the trees were planted with proper care, and then protected against external injury, the cause of failure must have been in the taking up of the trees. Failures of this kind, which are by no means uncommon, are very serious, for the planter loses not only the trees, and the labor, but frequently also all further interest in forest-tree planting, and it is, therefore, necessary to guard as much as possible against a re-occurrence of the same. For the information of those inexperienced in the details of taking up trees from the woods and of transplanting them, we quote from the American Agriculturist of October, 1883 :

“Many think it cheaper and better to take up large trees from the woods, and transplant them to their ground or to the roadside, than to buy nursery trees. As a rule, such trees die; they fail because proper precautions have not been taken. In digging up the tree all the roots outside of a circle of a few feet in diameter are cut off, and the tree is reset with its full head of branches. Whoever has seen trees in the forest that were upturned by a tornado, must have been struck by the man-

ner in which the roots run very near to the surface, and to a great distance. When the roots of these trees are cut off at two or three feet from the trunk, few or no fibrous or feeding roots are left; and if the mass of tops are left, the expansion of the buds in the spring will not be responded to by a supply of sap from the roots, and death must follow. If such trees have the tops completely removed, leaving only a bare, they will usually grow when transplanted. The tree is little more than an immense cutting; but there are roots enough left to meet the demand of the few shoots that start from the top, and growth above and below ground are well balanced. We have seen maples, elms, and bass-wood trees, fifteen feet or more high, transplanted in this manner, without a failure. Some trees treated in this manner were planted in our neighborhood about ten years ago. They have now as fine heads as one would wish, and show no signs of former rough treatment. Trees in pastures, or on the edge of the woods, are better furnished with roots. These should be prepared for transplanting by digging down to the roots, and cutting off all that extend beyond the desired distance. This will cause the formation of fibrous roots near the tree. It will be safer to take two years for the operation, cutting half of the roots each year. Such trees may be removed in safety, especially if a good share of the top is removed at transplanting.

"Shrubs of various kinds require the same treatment. Many of our native shrubs are of great beauty, and desirable as ornaments to the grounds. As ordinarily transplanted, they are rarely satisfactory. If the whole top of these shrubs, every branch, be removed, leaving only a stick with as much root as can be secured, success is quite certain. We have removed the Laurel (*Kalmia latifolia*) safely in this manner; the shrubs show no signs of their rough treatment."

CHESTNUT CULTURE.

By SAM. C. MOON,
Of Norrisville, Pa.*

VARIETIES AND CHARACTERISTICS.

The botanical name of the Chestnut is *Castanea vesca*, L., named after the territory of Castanea, in Thessaly. Loudon, in his Encyclopedia of Plants, says, that "The American chestnut differs so little from the European, that no specific distinction can be drawn." There are, however, several marked characteristic differences between the indigenous trees of the two continents. The most striking one is the difference in habit of growth. The habit of the American variety in young trees is to grow tall and erect, while the habit of the European is to form a lower, rounded head, very much in the style of the Norway maple, the height of the tree and the spread of the branches being about equal. But the

*This excellent paper was read at a meeting of the American Institute Farmers' Club and published in the *Tribune and Farmer*. There is great need of such practical information as is given in this paper. It will be especially interesting to those who have planted Chestnut groves or orchards, as well as to those who contemplate planting such.—A. L.

strongest evidence of a distinction is found when we attempt to intermingle their food by grafting. Scions will unite more easily and perfectly on stocks of their own family.

The leaves of the American variety are a little more acute and thinner in texture, while there is a slight difference in the appearance of the foliage and young growth, which a practiced eye can detect at a glance, although it is difficult to describe it so that an inexperienced person could comprehend the distinction. The nuts of the American variety usually have more of the downy covering on the upper part of the shell. The inner skin which covers the kernel is generally, in the European variety, more or less bitter, if eaten raw; but this bitterness is removed by boiling or roasting, although it is very seldom, if ever, that nuts of this variety are found as sweet or as finely flavored as the native nuts. The nuts of the European variety usually ripen from one to two weeks earlier; it is not uncommon for some trees to ripen and drop their whole crop before the appearance of hoar-frost. The nuts of the foreign variety are larger than the native, but it is very erroneous to suppose that the majority of the chestnuts which grow in Europe are as large as those which are imported into this country, and which are seen exposed for sale on the fruit-stands. Those are selected nuts, and are considered exceptionally fine, even in their native land.

The southern peninsulas of Europe, Italy, Spain and France appear to be the most congenial home for the chestnut, and there the nuts are more general than in most other parts of the world; but the fact remains that a tree which came from either of those countries, or was raised from seed imported from there, affords no certainty that it will bear large or good nuts. Very many of the European trees are but little, if any, larger than our own. All trees which are raised from seed vary more or less from their parent, and from each other. Certain peculiarly favorable conditions of soil or climate, or other influence, may operate to establish certain characteristics in a race of plants as well as of man. Some persons appear to entertain an idea that such a development has taken place in the European trees, and that the English, French, Spanish and Italian chestnuts are distinct varieties; and there are advocates who claim for each superiority over all others. But I am not able to learn that there are any characteristics peculiar to the chestnut trees of either country sufficiently distinct and well established to justify denominating them as "national" varieties, any more than we should speak of the New York, Pennsylvania and Virginia chestnuts as being different kinds. It is for this reason that I prefer the term "European" chestnut, as distinct from the American.

The "Marron de Lyons," and other superior varieties which are

highly recommended by the European nurserymen, will not endure our climate. But very few of the chestnut trees which are imported from Europe, or are grown here from imported seed, are hardy in this latitude. They are almost invariably injured or killed by the cold winters. There are, however, exceptional trees, more hardy than others, which endure our severest winters, and stocks raised from the seed of such trees are also hardy. In this manner a robust strain of stock has been accumulated here, and it is probable that there are a few hardy trees in this country which bear as large and as good nuts, and as abundantly, as any to be found in Europe. But natural chestnut-trees vary in the essential qualities which render them valuable, viz., productiveness, size and quality of fruit, time of ripening, etc., just as other plants do which are raised from seed. Therefore, grafting is as necessary in the chestnut as in other kinds of fruits, if we wish to insure with a certainty these valuable qualities to young trees.

Within the past few years I have had opportunity of observing more than thirty seedling European chestnut trees come into bearing, and of that number, only six proved to be really valuable. The others were nearly all cut down, because of their unproductiveness. The burs of some trees would not open when their crops was ripe, but fell with the nuts fast in them; perhaps as unmarketable a crop as could be raised. Of these six trees, which are now in their prime of bearing, only one combines all the essential points of excellence in the highest degree. This tree is now about thirty-three years old, is perfectly hardy, and has been enormously productive for several years. It is about forty feet high, and its branches cover an area of forty-two feet in diameter. The nuts are of the largest size. Sixty extra specimens have been selected which would measure one quart, while a quart of the average sized nuts numbers about seventy. The largest crop which it ever bore was in the autumn of 1880, when it produced eighty quarts. The average product for the last four years has been about two bushels per year. If this tree has any fault, it is the tendency to overbear. It blossoms twice nearly every year, and usually has a second crop of half-grown green burs on it at the approach of cold weather.

AGE OF BEARING.

The age at which natural trees commence to bear fruit is usually from fifteen to twenty years, but when grafted with a productive variety the age for fruition is reduced to eight or ten years. Grafted Chestnut trees will come into profitable bearing about as early as apples. Trees which were worked when one or two years old, will probably bear their first fruit the fifth or sixth year after, and it will be five or six years

more before the crops of fruit will be sufficient to more than repay the expense of gathering and marketing.

CULTIVATION.

The cultivation of Chestnut trees requires careful handling in every stage of their management, from the gathering of the seed until the grafted trees are planted out in the orchard. They are very sensitive to exposure of their roots to the air, and a very little neglect or carelessness in this particular will kill them, but if proper precaution is used they are of easy culture. To raise trees from seed, gather the nuts as soon as they fall and spread them on the floor in an airy room for two or three days, to allow the excessive moisture to sweat out; but they must not be exposed enough to become dried or shriveled. Then put them away for the winter in a box with alternate layers of moist sand, or saw-dust or moss, spreading the nuts very thinly, so that no two of them will touch each other. They should be kept in a cool, moist cellar, secure from mice, until spring. If kept too warm they will sprout before planting time, and the sprouts will be broken in handling them. As soon as the weather will permit in spring plant the seed in rich soil, covering with mellow loam, about one and a half inches deep.

Some persons prefer to spread the nuts on the ground when they are gathered in the autumn where they wish them to grow, and then protect them from the frost with leaves; then, in the spring, remove a portion of the covering, leaving only as much as the sprouts will be able to push through. This is certainly nature's method of preserving them, and if it were not for marauders would, perhaps, be the preferable one, but it is almost impossible to secure them in this manner from the ravages of mice and squirrels. Ground-mice will even eat the roots of one-year old trees, and if measures are not taken to prevent it may destroy a whole crop of plants the first winter. To guard against this it is well to dig the small trees and trench them in a secure place the first autumn.

TRANSPLANTING.

Chestnuts should be transplanted either the first or second year, as it is important to get the long roots checked and a mass of fibres formed while the trees are small, which is accomplished by occasional transplanting; otherwise there will be a great loss, if they have to be moved after they are grown up. To get well-rooted stocks, which have been transplanted once or twice while quite small, is one of the chief secrets of success in all planting, and the moving of large trees which have not

been so treated is always attended with serious loss of life, or possibly they may linger along in a stunted condition for years before they recover the check given them. Where this precaution is neglected the chestnut will be found one of the most difficult trees to handle.

TIME AND MODE OF GRAFTING.

The best time for grafting chestnuts is the second or third year after transplanting. They are more difficult to graft than some other trees, and young stocks will work more readily than old ones. The scions must be cut very early in the spring, before the buds commence to swell, and kept in damp earth or moss, or saw-dust, in a cool place, until the buds on the stocks are about bursting; then work the young wood by tongue grafting, and wax very effectually. The grafted trees will require attention during the first summer to keep the natural suckers gradually reduced, and the sap encouraged into the scion as it acquires strength. It requires longer time for the perfection of the union between stock and scion in the chestnut than it does in many other trees; grafts will often start and grow vigorously for a few weeks, but after they have grown six inches or more will die from "drowning," by too much sap, or from "starvation," by being robbed by the natural suckers. It requires judicious and skillful management to coax the grafts along through their first summer. The European chestnut succeeds best when grafted on stocks of its own family, although it can be worked successfully on the American variety, but on this many of the scions unite imperfectly, leaving an unsightly swelling at the point of union, where the tree is liable to be broken off.

PLANTING AND LOCATION.

In planting chestnut orchards the trees should stand about forty feet apart each way. They will flourish in a variety of soils, but want good, rich ground. Their natural home is on the strong and rocky hillsides where the land is good. They do not flourish on alluvial bottom lands as well as on higher situations. There are vast areas of territory in many rugged districts which could be utilized to good advantage by the introduction of chestnut forests. I do not know of any more desirable or more profitable tree to plant in meadows or pasture lands, to afford shade for cattle, than the improved varieties of chestnut, and it has few superiors as a shade tree in many other situations.

THE AMERICAN CHESTNUT.*

There is no tree that so quickly and surely reproduces itself from the stump, by sprouting, as the sweet chestnut. (*Castanea vesca*).† When a tree is cut in winter or early spring, a thicket of sprouts come out around the stump, and in a few years' time replace in weight and bulk the original tree.

There is near me a piece of second-growth timber, the original timber of which was removed in the winter of 1863-64, and which has been allowed to sprout and grow unmolested until this time. The most thrifty and beautiful of all this growth is the chestnut. Around one stump, which now measures twenty inches across the top, two feet from the ground, are nine sprouts, the smallest of which is about ten inches around, and the largest thirty, one foot above the stump. Six of the remaining are over twenty inches in circumference at the same height. The tallest is about seventy feet in height. Whether the original tree was straight, and tall, and valuable, I have no means of knowing, but the present combined size of the sprouts at the stump is about equal to the stump itself. The original tree was probably not less than one hundred years old, while the sprouts are but nineteen. This tree stood in a thicket of other varieties, under quite unfavorable circumstances. Had the sprouts all been removed but two, the second year after the tree was cut, these two sprouts would have been large and valuable trees at this time. Probably at first thirty or forty sprouts made a start, and doubtless ten years were wasted in a struggle for existence among these numerous sprouts, which finally resulted in permitting nine to grow.

In the edge of my own wood-lot are several chestnuts from eighteen to twenty-two inches in diameter, which have grown from trees which were cut in the autumn of 1854. In several cases the sprouts are larger than the original trees. Only one sprout was allowed to grow from a stump.

In the iron regions of northwestern Connecticut, it is the practice to cut over the steep hillside forests, which are mostly chestnut, once in twenty-one years, making the wood into charcoal. This has been done for more than one hundred years, yet the yield is each time larger than before.

A neighbor of mine has recently cut about fifty thrifty chestnuts to make rails for repairing his fences. If he would carefully protect the sprouting stumps for three or four years, he would, in twenty years' time,

* From Farm and Fireside, March 15, 1883. (Contributed by Lawrence, Summit county, Ohio).

† *Castanea vesca*, Gaertner, var. *Americana*, Michaux.

A. L.

have a growth of timber which would again repair his fences. As the chestnut-trees he has cut are scattered in a forest which he does not expect to remove, the cost would be absolutely nothing ; instead of this he allows a herd of cows to range in this woods, destroying everything that starts, and getting very little of value in the way of pasture. The shortsightedness of his course is more marked from the fact that he has an only boy whom he hopes to have succeed him in the ownership of the farm.

Wherever a chestnut tree is cut in a lot devoted to timber, one or more sprouts should be protected and encouraged to utilize the already extensive root formation which is ready and more than willing to carry on the good work of growing timber.

FOREST CULTIVATION FOR PROFIT.

By HON. MARTIN CONRAD,
Of Chicago, Illinois.*

MR. PRESIDENT, LADIES AND GENTLEMEN: I have accepted with much pleasure the invitation to address you on that department of forestry which more particularly concerns the present and future supply of timber required for the manufacture of farm machinery and wagons, because I feel that timber culture is not ordinarily a subject of such popular attention as it deserves to be.

The few remarks I am about to make, may suggest further channels of research and experiments in this noblest of nature's domains, and it is for you, as the practical promoters of this branch of our great agricultural interests, to direct such efforts as may be awakened by my words, if you shall judge them worthy of such distinction.

It is a noteworthy result of our daily vocation, be it what it may, that we are always taking mental notes of whatever may have the remotest connection with it ; yet it is true that this unconscious mental action in time quite dominates our facilities of observation. We hear the stockman speak only of the cattle he has seen in his travels—and it is the dairyman who can locate every fine herd of "good milkers" in the country. Even Miss Flora McFlimsy, absorbed in her own delightful occupation, may have "clean forgot" the text and all the good pastor said—but she can minutely describe each "duck of a bonnet" that comes within her range of vision. So it comes that the lumberman is no

*This well prepared paper was presented at the meeting of the American Forestry Congress, held at Springfield, Ill., September 14, 1887.

exception to this universal rule, for, even while gazing on your favorite herd of short-horns, his mind is elsewhere. He sees only the leafy grove in whose shade they are gathered, and is undoubtedly figuring how many feet of this or that grade each spreading oak would average.

Influenced in much the same way, my own observations during twenty years of experience in the wagon business have included in their scope the great problem which to-day confronts its chief ally, the lumber interest. I need hardly say that I have noted with much solicitude the wholesale destruction of our forests in all parts of the United States. I use the word "destruction" advisedly, and in its fullest sense; because the removal of timber for actual use is but a fraction of the evil causes now at work upon our wood-lands—while wantonness and rapacity are doing their worst in this war of extermination. Even the farmer, eager for quick returns, relentlessly uproots the last sapling, that the ground may be sown with grain, not thinking of how he is robbing future generations of their just heritage.

In ever widening circles does this destruction spread over the land. It is but a few years ago that Chicago drew the bulk of its white-wood supply from the State of Michigan, while to-day, that great timber State, in common with ourselves, draws upon Tennessee and other southern districts for this valuable wood. Oak, at that time, was so abundant that it could not be profitably shipped by rail to Chicago from outside a radius of a hundred miles; whereas, to-day, Arkansas and Mississippi are represented in the oak supply of the Chicago yards. Black walnut and live-oak are already practically extinct—but long before the culmination of this ominous result, even as far back as 1868—the Hon. T. M. Edmunds, in his report to the United States Department of Agriculture, foresaw a complete extinction of all timber resources of the United States in about fifty years. This threatened loss alone should demand prompt measures of restraint; but the disasters that we invite, through the climatic changes that must follow our imprudence, are appalling enough to justify the gravest fears.

It is not my purpose to introduce here any lurid pictures of calamities in store for us—as better pens than mine, guided by the hands of science have already enlightened us as to the probable course of events if the present conditions are allowed to continue. The note of alarm has been sounded long ago, and the stormy floods of the Mississippi and the Ohio have re-echoed it with terrific emphasis.

In proof of the enormous climatic changes that can result from such a cause, I may mention that we have an actual demonstration of the whole process at our very doors. I refer to the northern domain of our sister republic of Mexico, a section whose former luxuriance of vegeta-

tion once proclaimed it a paradise, and whose mineral wealth marked a brilliant page in the chronicles of the sixteenth century. This region is to-day a parched and torrid desert land, treeless and waterless, in whose barren solitudes it would seem that few would have dared to venture.

Yet it is a deeply significant fact that these sun-burnt valleys, not only around the city of Chihuahua, but also in many other parts of that section, should be covered with acre after acre of slag from silver-ore. It must be borne in mind that in all this strange region, there is not a bed of coal, and that, therefore, the extensive smelting operations that are evidenced by the vast field of slag must have required an also convenient supply of wood for fuel. It follows, then, that at some distant period of the past, dense forests must have covered this land, and furnished the necessary fuel, thereby completely verifying the statement of Bernal Diaz, the soldier historian of the Cortez expedition, that they found the region covered with luxuriant woods, verdant valleys and fertile plateaus. It was the treasure hunters, then, who followed these conquerors, that inaugurated the destruction which has extinguished these forests, and swept all vegetation from the land.

With nature's sheltering mantle thus removed, the denuded earth quickly yielded to the influence of an already arid climate, and the desert promptly spread over the area thus prepared for it. The noble forests have vanished at the touch of civilization, and with them, also, the life-giving interchange of clouds and the dew—the balance-wheel of nature's fertility. To-day only a few scattered ruins, here and there, in the midst of lonely wastes of desert, are left to speak of their former beauty and grandeur. Could the explorer Cortez, and his devout historian, at this moment look upon those beautiful valleys of three hundred and fifty years ago, viewing again the scenes of their adventures and discoveries, their pious Catholicism might be charmed by the sight of the grand cathedral, with its stately towers, costing almost a round million of dollars, as well as the beautiful park at its doors, with its fountains, trees, and luxuriance of tropical plants, maintained in this splendor by the ever watchful, artificial care of man; but, looking beyond this little garden spot, they would search in vain for the Eden of primeval beauty that first met their wondering gaze, for their eyes would rest only upon the dreary desolation and ruin which their treasure-seeking followers left behind them.

I do not attempt to trace the exact degree of climatic changes wrought in this particular instance. It is sufficient that the connection from cause to effect is obvious; and to those who have given a thought to the science of forestry, I need not repeat the immeasurable

benefits conferred by the presence of forests; how they equalize the humidity, how they furnish shelter, create springs, control the flow of rivers, and protect the proper moisture of the ground. On the other hand, history supplies instances enough of the decay of nations whose decline may be logically traced to the imprudent destruction of their forests, and the consequent disastrous and deteriorating changes of their climate.

Fortunately we have a prudent example before us in the countries of Europe, in all of which the forests are under government guardianship, protecting them against fire as well as spoilation; and, however little we may profit by this (for such a system would be a physical impossibility in this country), it may, at least, serve to remind us that our national legislation tends to the opposite direction, and that at least indirect relief could be afforded by admitting foreign lumber free, and thereby lessening that much of the drain upon our own resources.

Without stopping to discuss this point, it is worth while to see what can be done legitimately in the right direction, and to inquire if there is not a chance of redeeming the situation by intelligent and well-directed individual action, with a sufficient incentive of personal profit to warrant hopes of success. If I can show that proper efforts in tree culture will prove profitable, and that it is a sure and valuable investment for any farmer and landowner, this may be the means of forestalling evil results and recovering some parts of what has been so wantonly destroyed. To investigate this interesting point, I have searched many records, and exhausted many tables of statistics, only to be met with a most surprising meagerness of practical information on the general subject. It seems that of late comparatively little personal knowledge of any value has been given to the world, and if there be any reason for this it will lie in the fact that the life of a natured tree far exceeds that of a man, and that consequently no one individual can possibly follow the complete growth from its germination to its natural end. All our knowledge of any given growth is, therefore, a series of tradition, so to say, for each authority can furnish but a small section of personal experience.

In my researches I have consulted a great variety of authors as well as the very latest government reports bearing on this special subject; but, as already intimated, the practical side of the information they afforded was singularly meager and unsatisfactory. One author devotes a valuable number of pages to a continuous rhapsody over the "great ash tree" under which he played in the days of his childhood, while a still more pretentious writer, in trying to cover his exhaustive subject—"Trees of America"—commits the unpardonable blunder of

entirely omitting all mention of the oak—that tree, which above all, from a utilitarian stand-point, has earned the right to be called the king of our forests.

It followed, therefore, as a result of my researches, that I was compelled to fall back, in a great measure, upon my early experience with the trees of the forest, together with the practical knowledge of my later years in handling lumber as a manufacturer. Before I present the tabulated results of our calculations, I will give a short description of the five kinds of wood used in the construction of farm wagons, for in these five we have all the varieties that are used in implements and all outdoor machinery. I begin with the oak. (*Quercus*). Of the 150 or more varieties of this tree 82 are native to this country. Of these the White Oak (*Q. alba*) is the only one in demand by wagon and carriage builders, and as it is at the same time the most serviceable for all mechanical purposes, I will describe only this species.

The White Oak is indigenous to the State of Illinois, and is mostly found on yellow loam of moderate fertility, although it also flourishes on our prairie soil. It matures at about an average age of 80 years, after which it gains in size, but with no further improvement in quality, its further growth being a mere accumulation of adipose, if I may use such a comparison. When fully developed the White Oak is one of the largest and grandest of the entire forest tribe, and it is, of all the deciduous trees, about the most valuable for general purposes. In a wagon it furnishes the hubs, spokes, felloes, and all the running-gear, except the axles and the tongue, and it takes the lead in all other branches of wood manufactures, where special strength, solidity and durability are required, as in ships, car building, cabinet ware, implements, etc., etc. The natural forests of this supremely useful tree are, however, rapidly disappearing, and, if only on the ground of utility, its preservation and culture should be our very first care.

Next in order comes the hickory (*carya*). The hickory is exclusively an American tree, of many varieties, one or more of the several species being quite common in every State of the Union. None of them, however, better merits cultivation than the Shellbark, for wherever special elasticity is required, as in wagon axles, carriage spokes, hammer, pick and tool handles, etc., it stands without an equal, and in its growth it is as rapid as any of its kind. The timber is heavy, hard and elastic, and is very durable, except when exposed to a foul or moist atmosphere, in which case it decays rapidly. It grows to a height of sixty or eighty feet, with a diameter of two feet, and while young it is exceedingly graceful and ornamental, so that it might well be cultivated

for its beauty alone. For fuel its wood is by far the best in America, and its fruit is the hickory-nut of commerce.

The "thick Shellbark" must not be confused with the species just described. To identify the proper nut for planting, I may mention that it is of a globular shape, somewhat flattened, nearly pointless, with a thin shell and a large kernel. The nut of the "thick Shellbark" is twice as large, and has a sharp point at each end, the shell is thick, hard and of a yellowish tinge, while the kernel is very inferior. The leaf of the "Shellbark" always consists of five, while the "thick Shellbark" leaf has seven or nine. In this way the difference can be easily distinguished, not only in the seed, but in the young trees as well. Hickory for timber should be grown uninterruptedly from the seed; but it has been asserted that the transplanted tree will bear more and better quality of fruit.

I will now pass to the well known ash (*fraxinus*). To the manufacturer of wagons and agricultural implements this valuable timber is of high importance. It is very durable, and unites lightness, strength and elasticity to such a degree that no other wood could properly replace it for wagon tongues, fork handles, and the like.

It exhibits also a highly ornamental finish when used in floors, furniture, wainscoting, and interior trimming of dwellings generally. Besides all this, it is of high rank simply as fuel, and for all these multifarious purposes its consumption has so largely increased that the better grades are becoming very scarce, and the price has advanced at least 25 per cent. in the last fifteen years. I venture to say that unless its cultivation is begun very soon, the present generation will see its last for practical uses in this country.

Indigenous to North America are the *White Ash*, as also the *black*, *blue* and *green*, but of these the *White Ash* is the most valuable. It bears transplanting even when quite well grown, and appears to be quite free from insect foes, so that its cultivation would have at least these important points in its favor.

The next in order is the "tulip tree" (*Liriodendron tulipifera*), which belongs to the family of the Magnolia, and although commonly known under the various names of "White wood," "Yellow Poplar," "Tulip Poplar," etc., it does not resemble the true poplar in any respect. There is but one species of this genus, and it is one of the largest and finest trees of the American forests. Hough, in his "Elements of Forestry," speaks of specimens attaining a diameter of *ten* feet, and a height of 150 feet. It is found more or less all over the United States, but chiefly in the Western forests, wherever the climate is not too severe, and where the soil is deep and fertile. Its lumber, known as

"White wood," is superior to pine in wagon and carriage building, for several reasons. It is stronger, less liable to twist and warp, and has a dense grain, which renders it capable of taking a very higher finish without the use of any previous "filler," for which reason also its finish is much more permanent. Its clear qualities also enable its use in wide boards and the largest class of timbers. Its quality of width being a leading attraction, it requires at least sixty years before it attains a marketable size, hence, its only value to the producer in the meantime is its ornamental appearance, in which it has few equals. Its leaves are large, bright and glossy, its blossoms are of good size, abundant, and of an agreeable odor. This tree should be cultivated from the seed and deserves an extensive propagation, for it would be hard indeed to find another kind to fill its place in the wood-working industries, especially wagon-making and furniture. Its color and quality is decidedly affected by the nature of the soil on which it grows, and leads to the various names of "white," "blue" and "yellow" poplar, by which it is erroneously designated. The difference, however, is not externally manifest in the tree. The "yellow" variety is the toughest, hardest and most flexible, which leads to its extensive use in carriage panels, cylinder desks and other work where flexibility and toughness are required.

My list of wagon woods will end with the *pine* (*pinus*). This is the only coniferous tree that is of use to the wagon-maker, and it is perhaps fortunate, because none of the conifers are of any value for wagon lumber until at least sixty years of age, being used exclusively in the form of boards. To make the best lumber, they should be thickly grown when young, in order to produce a straight, tall tree of nearly uniform diameter, and free from roots. If grown in isolated situations, the tree will expend its vigor in the production of useless side-branches, and the trunk will taper very rapidly from the base.

The pine is used for wagon-box bottoms, in which the "hard-yellow" variety is chiefly employed. Its chief recommendation is its cheapness, since ash is fully its equal in lightness and superior in durability. The fact is, if it were possible to dispense with pine entirely, the wagon would be the gainer, and the list of our wagon woods would be reduced to the four deciduous trees already described.

Here, then, we have five species of forest-trees whose extinction alone, or even decline, would be a calamity of measureless extent to our entire nation. But it is a most unfortunate characteristic of our people, that, however imminent the danger, the great mass of them—in fact all but a few specialists—fail to evince the slightest personal interest in the matter. In a spasmodic manner, and to a limited extent, the tim-

ber question has received the attention of local, state, and national legislation, but to the average farmer the impending result carries but a very indistinct impression of a vaguely distant future days—interesting him much the same as the paragraph in his almanac, which tells him of the ages that remain before the extinction of the sun. To him it is a matter that concerns future generations, but need not worry; provided he credits the statement at all, which is not always. Moreover, with the great mass of people, the maxim holds good that “what is everybody’s business is nobody’s business,” and however threatening the result—when it comes to “sowing what others may reap.” or making sacrifices from which no return may be hoped for in this life, it is asking a good deal of human nature.

To bring forth adequate results, therefore, will, as I have said, require the powerful stimulus of personal gain to whomsoever shall venture his means and his time in this beneficent work. I am aware that it is the unfortunate, though general impression, that no profit can possibly accrue to an investment that waits for a forest to grow up from the seed, yet I propose to show that nothing could be further from the reality. I maintain that there is a profit in it, and that a well-directed system of cultivation will not only repay the investment richly at an early period, but will be the means of solving the economic problem of our timber supply.

Any line of inquiry looking to the practical solution of this great problem must naturally begin with the number of trees that can be successfully grown on a given space of ground—say an acre—for a unit of calculation; but simple as the question may seem, it is vain to look for it in books. One German authority gives us 300 to 400 trees to an acre, as the results of an eighty-year period of cultivation; but unless we are ready to allow a good deal for the rigorous thoroughness of the forestry system of the old country, we may be pardoned for doubting these figures. We must reflect that a square rod to each matured tree is a small enough allowance of ground space for a large healthy growth. This gives us 160 trees to an acre, but to be still more conservative, let us knock off 50 more, leaving 110 trees for the harvest eighty years after planting the seed. This result coincides exactly with the figures given by A. R. Whitney, Esq., the veteran tree-grower and proprietor of the well-known Whitney nurseries at Franklin Grove, Ill.

The long, practical experience of this gentleman has formulated the following method of cultivation, viz.:

Starting with a planting of 2,720 young trees to the acre, set four feet apart, he begins by trimming out, after ten years of growth, every other north and south row. Five years later every alternate tree in

each of the remaining row is removed, and after another interval of five years more, cull out all imperfect growths, which will leave an average of not less than 110 trees to the acre.

To put this result in marketable form is the next step in our inquiry, that we may determine the money value of our harvest. Our leading hard-wood lumbermen count an average of two trees for each 1,000 feet of lumber, and with these factors we may easily compile the following table, showing the balance per acre of our eighty-year crop of cultivated trees :

VALUE OF AN ACRE OF TIMBER OF EIGHTY YEARS' GROWTH.

Number of trees per acre....	110
Number of trees to cut 1,000 feet.....	2
Number of feet of lumber per acre.....	55,000
Price per 1,000 feet.....	\$18 00
Value per acre, eighty years' growth.....	\$1,100 00
Average value per acre per year.....	\$12 37½

Is not this encouraging result worthy of earnest consideration by every farmer and land-owner? A little further reflection will show him that the above result is safely within the reality, as such lumber we speak of will be worth at least \$50 per 1,000 eighty years hence, and he may also count upon the yearly trimmings of trees, which increase in value, growing from poles to trees that will make the very best second-growth spokes and carriage stock, as well as all kinds of the most expensive ax, hammer and pick handles. For these purposes, a tree at thirty to forty years is of greater value than when fully matured. Besides this we will have timber which will be useful for fuel, fencing or charcoal, and will eventually afford a steady revenue far beyond the actual cost of supervision and labor, and in addition to all this we must bear in mind that the timber left over after the logs are cut, including the tanbark, is nearly as valuable as the logs themselves. But you may say that a period of eighty years—aye, forty years—is a long time to await the fruits of your labor. True; but cannot its full value be realized just as readily as any of the other permanent improvements on your lands? Your investment in the tree-plantation is not locked up, for should you sell the place at any time, it will certainly take rank with the rest of the improvements as an element of value, and will bring its full price.

No other improvement on your estate can do more than this. The soil itself is certainly not as productive as it was when you first turned the virgin sod, while neither the well-appointed farm-house nor the roomy barn nor any of the other fixtures can even realize you a cent

except as part and parcel of the whole, and then only when it passes out of your possession by outright sale. It is the sum of all these improvements that enables you to value the property at twenty times its original cost, and not because the land will produce more than it did in the past.

Your investment in the tree plantation must, therefore, be ranked with the permanent improvements of the place, with the additional certainty that, at whatever period of its growth a transfer of ownership may take place, it will invariably yield its full value, for while all the rest are undergoing the process of natural decay, and requires constant labor and expense to keep them in repair, the value of the tree-farm until it matures is steadily accumulating with the years, and it must, therefore, in its intrinsic worth, prove the most valuable of all the improvements on your estate.

My subject having been limited to only such woods of natural forest growth as are in present use for the purpose referred to, I must mention that there are numerous varieties maturing at least a decade earlier that are possibly better adapted to our prairie soil, which might be substituted in many branches of manufacture without affecting the quality of the article. However, as I have based my estimate of profit upon the oak, which of all species requires the longest time to attain maturity, it follows without argument that with trees of an earlier maturity the average would be proportionally larger.

Having therefore clearly shown that the culture of timber implies nothing in the nature of sacrifice, but on the contrary is a valuable source of revenue, it follows that the great problem can be solved by the incentives which nature herself holds out. She asks nothing without recompense, but offers a far more substantial reward than the mere consciousness of duty performed. Had the proprietors of the Schluttler wagon-factory planted an oak for each one they cut down for spoke timber since the establishment of their works in 1843, they might to-day make a like amount of second-growth spokes from the same ground.

And before going further, let me say that this latter fact has actually been verified in a most interesting and noteworthy manner. The factory named has just finished a wagon built entirely of cultivated Illinois timber, twenty varieties of which enter into its construction, none of them over forty years' growth from the seed. This great variety was sought, only to show what is possible to produce on our prairie soil, and not for lack of material, for the entire running-gear could have been made out of one honey-locust log in the lot, which measured 18 inches clear in diameter. The entire assortment of woods was furnished by Mr. A. R. Whitney, of Franklin Grove, of whom

mention has been made, and his testimony on this subject hardly needs stronger proof than this interesting collection of Illinois woods, grown by his own hands. No less praise is due to the far-sighted manufacturers, whose thorough grasp of the question has thus evolved the first wagon of the kind ever seen on the American continent.

To conclude my theme, I would therefore offer the plan of "Tree Culture for Profit" as the only rational means that we have, not merely for recovering what we have lost, but for preventing the evil results which a few more years of our blind folly will surely bring upon us.

To this end, I would not only urge upon every farmer to check by all means in his power, the indiscriminate destruction of our trees, but to preserve and foster the young growth as he finds it on his lands, and above all, to plant at least ten acres on each quarter section of our treeless area, as a systematic step towards correction of the evil.

Having occasionally met with the assertion that the original timber area of our State had not been impaired in the last forty years, I took pains to investigate this point, and upon consulting the latest reports to the Department of Agriculture at Washington, I find that seven counties show an average increase of nine per cent.; ten claim to have the same area; while a fair computation of the loss in the balance of the counties shows an absolute decrease of the entire area of the State of 50.2 per cent. during the stated period of time. The further fact that both quality as well as quantity is rapidly diminishing is shown in the decrease of over 10,000,000 feet of our lumber product in a single year.

As the reports are compiled from the best and most intelligent sources obtainable in each county, the data are as nearly exact as it is possible to obtain such information.

Treating upon this subject in general terms of Southern Illinois, which was formerly covered with timber of valuable varieties, such as oak, walnut, hickory and white-wood, one of these correspondents says: "About one-half of the area has been cleared and put under cultivation. Much of the timber was burned on the ground, and all that remains has been culled over and the best taken." Another, speaking of Gallatin county, says, in 1857, fully 80 per cent. of this county's area was covered with forests. The Wabash and Ohio river bottoms and valleys are covered with a growth of large, heavy oaks, black-walnut, ash and other valuable varieties. All these have long since been utilized for lumber, and but little economy displayed in cutting. At present rates of destruction and consumption, in ten or twelve years no timber worth naming will be found in the county. Not over 20 per cent. of the entire area is now in timber of any kind, and the new growth is not of the valuable original varieties.

Increased area is only reported from counties that had very little originally. Lee county is one of this class, and makes the only progressive report of the entire list. The correspondent says: "When I settled in this county, forty-nine years ago, about one-twentieth was in good timber. Most of this timber has been cut off, but very little of the timber land was cleared for farming uses; and as this has produced a new growth, there is now a greater area of natural growth than at the date of first settlements. Where the timber has been cut away, the severity of winter and storms at other seasons of the year has been intensified.

"Much tree-planting has been accomplished, and where this has been done on the prairies, and where the natural re-invested forests have again attained size, there has been a perceptible modification of climatic conditions."

This is a very interesting report, but I am hardly prepared to admit the possibility of producing climatic changes within such narrow limits. To create any effect it requires a larger area than that of a single county in which the timbered portion is but a small fraction of the whole, but, nevertheless, we must say that Lee county is moving in the right direction. Were all to do likewise, this inevitable consumption of our forests might be arrested instead of being encouraged by such statements as the one in which I am herein forced to controvert, for it lulls to a dangerous indifference at a time when our vigilance should be aroused.

Let us not then, ostrich-like, bury our light to avoid the apparition of danger and not yet believe it far away, for another generation may find itself battling with the consequences. For so surely as the forests are swept away, so surely will our mighty assistants, the clouds and the sunshine, the winds and the rain, refuse their further service in calling forth and nurturing our growing crops. But released from all control they will descend upon our fields only to blight and destroy. Instead of the gentle zephyrs of spring, we have called forth the black demon of the cyclone, and for the gentle and life-giving rain we have exchanged the terror of the mighty flood, alternated with the hot breath of the drouth. This is what we shall have to reap for so wantonly wasting that which we should have used with prudence, and upon which future generations have a claim as well as ourselves; for it certainly was never intended that we should destroy any of the elements upon which depend the welfare of posterity.

Baron Ferdinand von Mueller beautifully expresses the situation when he says: "I regard the forests as an heritage, given to us by nature, not for spoil or to devastate, but to be wisely used, reverently honored, and carefully maintained. I regard the forests as a gift entrusted

to us only for transient care during a short space of time, to be surrendered to posterity again as unimpaired property with increased riches and augmented blessings, to pass as a sacred patrimony from generation to generation."

THE EUROPEAN LARCH.

Larix Europæa, Linn.

By DAVID NICOL CATARAQUI, Ontario.

There are three other species of this tree; one is a native of America, one of Siberia, and one of China.

Between the European and the American larches there is so little difference in their characteristics when young that they can hardly be distinguished as two different species, though in their growth and quality of their woods there is a remarkable difference.

In the American larch, *Larix pendula* (Black Larch Tamarac), the branches are stronger, the bark more inclining to yellow, the scars more slender and clustered, the leaves are more slender, narrower, and more glaucous, and the outer ones of each bundle shorter; cones only one-third the size, blunt, with scales scarcely exceeding twelve in number, thinned more shining, retuse, emarginate wings of the seeds straight, more oblong, narrower, and, together with the seed itself, of a more diluted gray color.

The European larch is a quick-growing tree, which rises to the height of sixty feet. The branches are slender and generally drooping, the bark of an ash-gray color, the leaves a little wider, bright green, all nearly equal, commonly more than forty in a bundle. The male flowers appear in the month of April in the form of small, purple cones; afterwards the female flowers are collected into egg-shaped, obtuse cones, which in some have bright purple tops, but in others are white. This difference is accidental, for seeds taken from either will produce both sorts. The cones are one and one-half inches long, with over thirty woody, stricted, rounded, entire scales; under each scale is lodged a brownish-gray seed, with two subtriangular wings somewhat bent in; tree generally grows perfectly straight.

No tree better deserves our attention than the larch, for it is one of the most valuable, which brings to the planter the quickest returns, with the most certain profitable results.

It possesses many valuable qualities, succeeds in almost every climate, thrives well on poor land, and is certainly destined to become a blessing to the nations that adopt it.

In countries where it is plentiful, its wood is preferred to all kinds of pine for almost all purposes; for ship-masts, yards, booms and gaffs, nothing excels it; and in Europe it is extensively used in ship-building; for doors and window-frames it is well adapted, because it does not shrink or warp. Joists and rafters made of it support an almost incredible weight, for it is exceedingly strong. Under water it becomes almost petrified and lasts for centuries. In Venice the piles on which many of the houses were built many hundred years ago, are said to be as fresh as when first put in; for canal lock-gates, no wood is equal to it. The wood varies in color according to age—that of the young trees is nearly white; as the trees grow older the wood becomes red, and is used for furniture-making. Shingles made of it are more durable than cedar or pine, the rosin which it contains is hardened by the air and becomes a smooth, shining varnish, which renders them impenetrable to moisture. For ornaments or farm fences, hurdles and gates, it is particularly suitable, because they can be made lighter and more durable than of any other kind of wood. In Italy it is used for carriage-building, for wainscoting, paneling and flooring. No wood takes paint better. It resists the bore-worm, and wherever strength and durability are required, larch timber is admirably adapted. A valuable product of the larch is Venice turpentine, which exudes spontaneously from the bark, but is more commonly obtained by boring a hole in the tree and inserting a pipe; this turpentine has always been considered useful in chronic rheumatism and paralysis, gravel-complaints, scurvy and pulmonic disorders.

The larch, when allowed plenty of room, makes a very handsome ornamental tree; its grand habit, with bright green foliage and purple flowers, makes it exceedingly beautiful. Placed on lawns surrounding the country villa it has a remarkably fine effect; being perfectly hardy it is never injured by severe weather.

PROPAGATION AND CULTURE.

Though the cones are at their full size in autumn, they are not quite ripe until the beginning of winter, which is the best time to gather them. The seeds in their cones will remain good for years, yet out of their cones they lose their vegetating quality in a few months; therefore, as soon as they are out of their cones, they should be mixed with dry sand and kept in bags or boxes until the season for sowing, which is as early in spring as the ground will permit. When the cones

are exposed to the sun a few days the seeds are easily threshed out. They should be sown in finely-made beds of sandy loam and covered with nearly half an inch of fine compost mixed with sand. If kept moist by gentle watering, they will begin to appear in four or five weeks; they must be partially shaded, because when newly up they are very tender, and a few hours of the full sun would completely destroy them. The following spring they should be picked out four or five inches apart or in rows; in the succeeding spring they should again be transplanted at wider distances, in rows three feet apart and fifteen inches apart in the row, and allowed to remain two years, by which time they will be four to six feet high, and of the proper size to transplant in exposed situations.

In favorable situations, when they are well protected, they do better when planted of smaller size, say three years from the seed; they start more freely and make more rapid progress. Experienced planters have long ago decided that the larch should be planted entirely by itself, because of its quick growth it soon outgrows all other trees, and when scattered thinly throughout the forest, the tender top shoots are apt to be damaged by high winds; they do best when planted thickly, because they shelter one another; they are often planted as near as three feet, and sometimes as near as two feet, but I would prefer the former distance; planted at this distance they rapidly shoot up straight, clean and healthy. At three feet apart an acre contains about 4,900; in this state they should be allowed to remain six or seven years, when they will have attained the height of twenty feet, if they have been well cultivated the first three or four years; they should then be thinned out for the first time by taking out every alternate row; the thinnings make the best quality of hoop-poles, worth at present about five cents apiece; 2,450 poles at five cents bring \$122.50. Then being allowed to remain in this state about three years longer, they should have the second thinning. By taking out every alternate tree in the row, this would leave them six feet apart each way; the thinnings are now five to six inches through, and are worth ten cents apiece for boat masts and yards, supports in mines, etc.; 1,225 spars at ten cents brings \$122.50. After growing five years at this distance they should be finally thinned out to twelve feet apart; the trees will now be seven to ten inches through and over thirty feet high, can be sawed into rafters, fencing, flooring, etc., and are worth at least twenty-five cents apiece; 612 spars at twenty-five cents brings \$153. Now, if we suppose that the sale of poles and spars would be sufficient to defray the expenses of making and upholding the plantation, and that each tree still remaining on an acre, say fifteen years after planting, is worth only twenty-five cents, the value

of 612 trees is \$153, there would be a handsome profit after allowing \$2 a year for rent, which, for fifteen years, would be \$30, and a great deal of land suitable for growing the larch would not rent for more than half that amount. Now the expenses cease, because the forest can be pastured with sheep without danger of injury to the trees; the increase in value is now much more rapid, the annual increase of the circumference of the trees will average one and one-half inches until they nearly reach maturity, which is in about fifty years after planting. The trees will then average thirty to forty inches in diameter three feet from the butt. Each tree will produce about 450 feet of lumber at \$25 per 1,000, \$11.25, less expenses for drawing and sawing, \$2.25. It would surely not be considered extravagant to value each tree at \$9; 612 trees at \$9, \$5,508, less thirty-five years' rent at \$2 per acre; \$70 from \$5,508 leaves a net profit of \$5,438. Be it observed that plantations of larch do not impoverish the land, but rather improve it. The annual deposit of leaves gives more nutriment to the soil than is taken from it by the trees.

Larch in its green state is almost incombustible, so there would be but little danger of destruction by fire, and there would be none if the dead branches were taken away.

A man would have to begin planting when young in order to realize the profits of a plantation, but he can, by planting soon, add much to the value of his estate, and the investment would probably be as safe as in bank stock. The price of lumber now is more than twice what it was fifty years ago, and there is every reason to believe that it will double in price before another fifty years has gone.

There are thousands of acres of land in Canada and in the United States which cannot be converted into arable land—an acre of which would give but poor summer maintenance for a goat—if judiciously planted with larch would soon become the most valuable land in the State, and would add immensely to the wealth of the nation.

WIND-BREAKS AND SHELTER BELTS.

Of all the questions that bear upon the subject of forestry, none has been discussed more frequently and more thoroughly than that of wind-breaks and shelter-belts, so that nothing new can be added. The only plea that is offered for referring to it again, is the neglect of heeding the advice and making use of the instructions given. A correspondent of the American Rural Home,* signing himself R. L. D., Jamestown, Ohio,

*American Rural Home, December 10, 1887.

speaking of wind-breaks, says: "As the wooded portions of the country becomes cleared up, the extent of these extensive openings must eventually affect the climate in no small degree. Already is this seen in the extreme changes of temperature, which fifty years ago were as rare as now they are frequent. The disastrous floods of the Ohio valley are also reminders that the vast wooded areas are disappearing. The vast quantities of leaves which yearly fell served as a sort of flood-gate to check the melting snows and early spring rains. Now the time required for a heavy rainfall to run off is only a few days. Formerly the water was gradually retained by these wooded reservoirs until summer was well on.

"Perhaps in no way is the absence of our forests more noticeably felt than in the piercing, biting winds of our recent winters. This is not a matter affecting merely the comfort of ourselves and our stock, but it is telling upon the winter wheat in many localities. For example, a field near here, well protected by timber, thrashed twenty bushels of wheat per acre, while another field, not protected, with soil and cultivation almost equal, thrashed about ten bushels per acre. Another field was partly protected. The part exposed yielded about five bushels per acre, and the part protected yielded about fourteen bushels per acre. Cultivation and soil the same all over the field.

"The lesson of this is obvious. We can not replace the old forests, nor would we if we could. We must provide some artificial means for protection. Wind-breaks, if placed on the sides toward the prevailing winds, will give material relief. We cannot expect to enclose our farms with trees when land is so valuable. This is often neither necessary nor desirable, when trees have been judiciously planted upon some knoll, or upon some hill-top over which sweep these blighting blasts of winter.

"Perhaps there is no tree better adapted to this purpose than the Norway spruce. It is a vigorous grower, and what is desirable, it grows tall. When growing in clusters it presents a well-nigh impenetrable barrier to the wind. Specimens planted in our yard ten years ago are now thirty feet high. For a wind-break they should be set about four feet apart. After they have attained a fair growth, cut out each alternate one. Where a grove of deciduous trees is desired to shield from the heat of summer as well as the cold of winter, I would advise planting bass-wood or linden. It has a rank growth, and makes a noble shade. Its bloom is a recognized source of honey, and its wood, being white and light, is always in demand for various wares. The black-walnut has been extensively planted in the west. Likewise the willow and cottonwood. It must be remembered that a much larger area of deciduous trees is required for this purpose than when evergreens are grown.

"It may seem a little inopportune to press this subject, but each suc-

ceeding decade sees the timber area gradually lessened. Even where the forests have not been the scene of wanton destruction, the most valuable trees are beginning to decay, and no steps are taken to replace them. When we do see the necessity for planting timber for protection it will be a matter of regret that we did not give this subject due consideration sooner."

FOREST-TREE PLANTING A NECESSITY.

With the gradual disappearance of our natural woods the necessity of planting artificial woods or forests becomes more obvious. Men in all parts of our land and in the varied situations feel that the time has fully come at which effectual steps should be taken to increase our wooded area, not only for the production of the various forest products, but even also for the amelioration of climate, for the protection of our water-courses, for shelter and for ornament. Thus Mr. G. W. Bailey, of Wellington, Kansas, says:*

"The annual destruction of our natural forests for railroad construction and lumber is tremendous, and unless something is done to check this wholesale destruction and to encourage the planting of artificial forests, it will only be a question of time until a large part of our country will be as barren as some of the older countries that passed through the same experience in the destruction of their forests. In some of our Eastern States springs and creeks which were once abundant, are now known and remembered as things of the past. Walnut lumber that I have known to sell for \$8.00 and \$10.00 per 1,000, is now worth in some of the eastern markets \$200 per 1,000 feet, and scarce at that price. The time is coming, and it is not far distant, when black-walnut furniture will not be in the market, except at a high figure. Forest timber does not occupy the position it did before the era of railroads in the question of fuel. Then, unless coal could be had at local banks, it could not be used for fuel; and if timber was scarce, like it is here in Kansas, no one could live in a country so situated. The building of railroads has changed this materially. The facilities afforded for the transportation of coal all over our country, making it possible for people to live in a country comparatively devoid of timber, similar to a large portion of our own State. Who were to blame for the condition of the coal trade I am unable to say; whether it was the fault of the railroads or coal-dealers, or both, I do not know. Every farmer should take heed to the lesson taught by this winter's coal-famine; and if he has not already done so, plant trees for fuel and wind-breaks; not a few rows only, but several acres, so that in the future he may be independent of coal famines and their originators.

*In the Kansas Farmer, January 26, 1888.

“ Contrast the farm home that is surrounded by beautiful groves of evergreen or other forest-trees, a nicely-kept orchard, shrubs and rose-bushes, with one that is too frequently seen—not a tree of any kind on it, barbed-wire fence around the barn-yard and feed-lots. Pass such a place as this while a full-fledged ‘norther’ is in progress, the wind blowing at the rate of forty to sixty miles an hour, with the thermometer at or below zero, the owner of such a desolate place at the time attempting to feed his freezing stock, and the wind, as if to punish him for his negligence, slapping him against the wire fence; his hat, leaving its shallow resting-place, darts across the barn-yard, striking the south line of fence, fluttering for a few moments, then loosened from the barbed-wire it starts at railroad speed over the boundless, billowy prairie to return again, perhaps, when the wind changes, while the luckless owner, trying to let go of the wire-fence with which he collided, curses the country, and resolves to sell out and go back to his wife’s folks. And that is what he ought to do, having no more thought or interest in his own comfort and welfare and that of the poor dumb brutes that the Deity, by misplaced confidence, confided to his care. The above scene is sufficient without adding the discomforts that the good wife and children must necessarily put up with under such adverse circumstances.

“ Now, go with me to the next house while the same blizzard is in full force. The owner of this place came to Kansas to stay; he has a nicely-arranged front yard seeded to blue-grass, with shrubs and evergreens scattered here and there, forming a fine contrast to the snow that lies around, between and beneath them, while the tall symmetrical cedars seem to say, as they sway to and fro by the force of the wind, ‘Come and seek shelter behind the thick foliage of my swaying branches.’ Not far from the house is a fine orchard of apple, peach, plum, pear, cherry, and a fair selection of small fruits, grapes, etc. The whole farm is enclosed and fenced into a number of fields by hedge, forming in winter a fine wind-break, and in summer, to any one who is in love with nature, the finest landscape scenery that an artist or any one else could wish to look at, when seen from the tower of a wind-mill. Good wind-break north of the farm and feed-lots, his stock is not shivering behind the fence-posts trying to get out of the wind. * * * * * In passing a farm home like this out on these broad, treeless prairies, you are led to exclaim, mentally, if not orally, ‘Blessed is the man that planteth many trees.’ ”

TREES AND BLIZZARDS.

Prof. Charles E. Bussey, treating on the influence of trees upon blizzards, writes to the American Agriculturist for February as follows:

“ I have been much interested in watching the effects of tree-planting upon blizzards. The blizzard drives along the surface of the ground, and it has for ages upon ages found no tree to halt or veer it. The settlers on the plains planted trees, however, and these trees now stand as obstacles to the full sweep of the ice-laden wind. A few days ago, as a blizzard swept over the country, I passed through a loosely-planted grove of trees, cotton-wood, silver-maples, green-ashes, etc., and noted

with pleasure that among the trees the violence of the wind was greatly reduced, and the flakes of snow dropped lightly to the ground, where they rested as contented as though they had fallen upon the tree-covered hills of New England. As soon as I passed out of the grove I had to face again the furious flakes, driving horizontally in their mad career over the earth. As often as I passed through a little grove of trees, I found that I left the blizzard, but as soon as I emerged from the sheltering trees, the blast struck me again in all its fury. This bit of experience is duplicated thousands of times every day upon the plains. The tree-planter has routed the blizzard wherever he has set his little army of trees. The blizzard tyrant no longer rules at will over all the Mississippi valley. Wherever a grove has come into existence, there the blizzard's scepter has been broken. True, he rules as fiercely outside of the groves, but as these enlarge, his domain contracts. When once the groves are approximately continuous, and when once they have grown to greater heights, the blizzard will be a thing of the past. The settlers upon the plains need not fear the blizzard for more than half a dozen years, if he calls to his aid the friendly cotton-wood, maple, ash and elm. They alone can vanish this terror of the western winter. Let every settler's motto be: *Trees rather than blizzards.*"

PROTECTION FROM PREVAILING WINDS.

By L. B. PIERCE,
Tallmadge, Summit county, Ohio.

The terrible storm of March 12th did not reach northern Ohio in a very aggravated form, but a very high wind prevailed on the following day, that made it quite disagreeable and uncomfortable for those compelled to be out. I was one of the unfortunates who were abroad in the storm, and I realized to a greater degree than ever before the value of protection around farm buildings. My own home is protected on the south and southwest by a neighbor's woods—a tract of about ten acres—while on the west is a high hill bearing an apple orchard. This orchard and the woods bound the doorway at a distance of ten rods; while on the northwest protection is obtained by a belt of evergreens commencing opposite the house and running north about ten rods. These evergreens have been planted seventeen years and were one foot high at planting. Part are Norway spruce, and part American arbor vitæ, and are the remains of a block of nursery trees. The arbor vitæ are on the east and could be entirely removed without seriously impairing the value of the protection furnished by the spruces, which are thirty feet high and occupy not more than two rods of ground in the widest place.

On the day in question the wind was blowing a gale not less than thirty miles an hour—and on a neighboring farm it was impossible to load hay or straw in the open

field (the experiment was tried), yet around my house and barn there was little indication of the terrible commotion going on outside.

Overhead the snow filled the air, and beyond the woods and trees was a noisy roaring; but this was all. The wind was a little north of west, and to the leeward of the evergreens one could walk with a loose summer hat and not have it blow off. The comfort resulting from the protection is often made a subject of congratulation by the neighbors and winter visitors, and several acquaintances have already planted evergreen belts with a view to deflecting the wintry blasts. In the illustration furnished by my own surroundings there is much that is due to location, that every one can not imitate. The woodlot on level ground flanked by an abrupt high hill is the work of nature, the orchard was planted long before, and with no view to protecting the buildings erected to the eastward, so that the selection of building site and the leaving of a portion of the evergreen block may be considered the only studied part of the present fortunate and comfortable combination, yet there is not a farmer's home in the country which might not be greatly improved and ameliorated by a careful study of the situation and a judicious planting of a few of those trees which nature seems to have especially designed to ward off the wintry blasts. A single row of arbor vitæ or Norway spruce is about as efficient a protection from wind as a tight-board fence of the same height and width, with the advantage that it will not rot down or blow over. So efficient is this means of protection that many green-houses are protected on the west and north that were formerly shielded by high board fences, and the packing grounds of the large wholesale nurseries are made quiet and comfortable by the same means.

At the annual meeting of the Ohio Horticultural Society, Mr. J. J. Harrison, a member of a large nursery firm, said: "At the risk of being charged with an attempt to boom my business as a grower of evergreens, I will say that there is as much difference between the windward and the leeward side of an evergreen screen in a raw windy day as there is between a comfortable room and an open shed. Our packing grounds, protected by high screens of pine, spruce and hemlock, are comfortable and cosy when raw November or April winds are blowing so hard as to make work outside next to impossible."

In view of what I have written, I would advise every reader to make a beginning in the way of being protected from the prevailing winter winds, instead of waiting to some indefinite future time contingent on many uncertain plans. Begin at once in a small way. Get 50 or 100 small, once or more transplanted trees, and plant them in the garden, and let them grow to a size suitable to place in a wind-break. A Norway spruce costing five cents, eight or ten inches high, will in four years of good cultivation be three feet high, and as good as a nurseryman would ask thirty or forty cents for. A scotch pine costing three dollars per hundred will in four years be as large as it should be to be transplanted safely. There will be a large saving in cost of boxing and shipping, and the value of an evergreen taken up and immediately set out within a few hundred yards is twenty times as great as that of one boxed and shipped a hundred miles. As to varieties, the Scotch pine, on dry, rich ground will give the quickest results. For beauty, permanence and height, Norway spruce is the variety to plant. Where a screen must be confined to a very narrow base—say six feet or less, the American arbor vitæ fills the bill, and it will thrive on very wet soils. For a slow growing screen of great beauty to plant close to the house, nothing can equal the American hemlock.

The manner and place of planting a wind-break must be decided by the location and prevailing winds. A single row is very efficient, but not as artistic as grouping. Where the side of a dooryard is in the direction of the wind, the best way is to widen it enough to admit the necessary planting, and then plant in groups lapping by each other. A liberal lawn with such a boundary would be a very profitable improvement to many fine farm residences.

There are many cases where the arrangement of the buildings is such as to give partial protection to the dooryard or barnyard, and a very little planting of such narrow trees as the arbor vitæ would very seriously cripple the power of high winds. The places where hats are blown off, and garments and umbrellas turned wrong side out, should exist around farm buildings only while an evergreen protection is attaining a size that will rob them of their unpleasant power.

EXTRAVAGANCE IN LUMBER.

The scarcity of the supply of timber seems to have little or no effect upon the primitive mode of cutting and handling timber. "The wanton waste of lumber," says an exchange in the *Wood-worker*,* "is often one of the striking features of the camps. In California it is still worse, only the largest trees are cut. Those measuring less than two feet in diameter are rarely touched but to ring and subsequently burn. In this country, even with the rare and valuable roots, we leave a large, unsightly stump, often the most dense and beautiful part of the tree. Generally speaking, the roots of these trees are not widely divergent, nor extremely thick, and it is strange the woodsman insists in cutting off so far above ground.

"Apropos of this may be mentioned a little experience of the writer: Two years ago, in the usual run of business, an old woodlot came in my possession. One part of this was the remnant of an old walnut forest, being thickly studded with stumps from three to four feet high, and literally strewn with tops and limbs from a foot in diameter down to four inches. Some of these were quite lengthy, but the larger ones were, of course, crooked and scraggy. To make a long story short, these stumps were grubbed out, the tops all trimmed, and the entire lot being taken to the mill by, the result being the interior of a new house was almost entirely finished with walnut. All the stationary stands, book-cases, wainscoting, stairs, balustrades, and the like, besides much of the furniture, was made from this walnut slash, besides which four thousand feet of beautifully grained lumber for special purposes was gotten out, which netted thirty-seven dollars per thousand feet. This one hundred and fifty dollars more than covered the cost of clearing, hauling and sawing, leaving the field perfectly clear and nearly ready for the plow.

"Of course the field was a good one; but all things considered, I venture the assertion that the aggregate profits from the slash and remains were greater than from the original forest, for the lumber from this particular field was sold in a bunch, mill-run, for twenty-five dollars per thousand, and, including first cost of the land, nearly three-fourths of this price must have been exhausted before the lumber was ready for market, proving conclusively that the lumberman of eight years ago did not hew close to the line. Whether he has learned to hew any closer may be demonstrated by visiting any section, where trees, even the more expensive, are being cut. The stumps and tops still cumber the ground, while the manufactories

**Wood-worker*, December, 1887.

are continually making small pieces from the plank sawed long and wide; whereas, the trees would go a great deal further, and the results would be as good or better by working no closer and down lower, making shorter cuts, but producing much handsomer grain, as demonstrated in the foregoing. Besides, it should be borne in mind that these results may be materially exhausted by working at the start. Cutting low, below the ground, means a longer butt cut, always the best of these hard wood trees, and, in connection with the upper cuts, limbs and bends can often be worked in to much better advantage than after the main logs are cut.

“What is true regarding valuable lumber, applies with all its force, only in a modified form, to all varieties of timber. Any stump that shows unbroken soundness on the top represents a waste in proportion to its height. The peculiar construction of tools, and the nature of the average tree renders it nearly as easy and much more profitable to cut off at the very bottom, and there is no reason why the long, straight limbs should not all be worked up into merchantable goods, and that, too, at a fair profit to producer and consumer.”

BIRDS AS FRIENDS AND ENEMIES.

Nearly every assembly of horticulturists discusses the bird question, and the Legislatures of the different States, when a bill for the protection of game is considered, show that there is a wide difference of opinion upon birds. Evidence as to particular species of birds is often of the most opposite and contradictory character. One speaker declares that he has watched certain birds, and is sure that a pair of them will catch a given number of caterpillars in an hour; another states that he has shot the same birds by dozens, and on examining the crops and gizzards, he found only the remains of fruits and grains, and not a vestige of an insect. The discussions about birds by different gatherings of fruit-growers and farmers, seem to result in little besides the presentation of evidence which bears equally in favor of and against different birds. One important point seems to be left out of these discussions. Whatever may be the food of the adult birds themselves, they almost invariably feed their young upon insects, especially soft-bodied ones, such as caterpillars. The capacity of unfledged birds for food of this kind is something wonderful. Instead of discussing the questions whether this or that bird is useful or injurious to the farmer or fruit-grower, the question should be, “Is it on the whole more useful than injurious?” In other words, can we afford to pay the birds when mature, in fruit and grain, for the service they have rendered in devouring insects while young? It will be seen that the character of a bird, no more than that of a man, can be properly judged from a brief acquaintance. We must know it “by and large” before we can come to a proper decision. That such an investigation is attended with many difficulties, is shown by the report of Prof. Forbes, of Illinois, on the bluebird. He found on examining the stomachs of many birds that they contained little else than the remains of insects. A superficial observer would at once assert that the bluebird was amongst the most useful of birds, as it feeds almost entirely on insects. Prof. Forbes shows that the question is far from being a simple one. When he ascertained what kinds of insects were eaten by the bluebird, it was found that a large, but varying proportion of these were useful insects, that is, insects which feed on other and injurious insects. It will be seen from this that the

beneficial character of this bird becomes a complex problem. In one month it destroyed more useful than injurious insects. And had these useful insects been allowed to live, it is claimed that they would have destroyed many more injurious species than the bluebird did. We may state that observations in other months are more in favor of the bird, but cite this case to show the difficulties that surround the question. All will agree, however, that a very bad case must be made against the bluebird before we can be willing to dispense with its cheery spring notes.

This aesthetic side of the question will be considered by some, while others may look upon birds as robbers of grapes and other fruit, and to be shot on sight. A lover of nature, like George Husman, writes: "The redbird or cardinal, the thrush or catbird, also are very destructive, and it is still an open question with me, whether to feed them with sweet grapes or kill them and go without their sweet songs in the future?" And it always will be an "open question" with those best fitted to enjoy rural life. But the crow! He is to all such discussion what roast beef is to the dinner—the *piece de resistance*. It is only within a few years that speakers at the various meetings had the courage to say a word for the crow, but now it is admitted that his character is not so uniformly black as his plumage. In Northern gardens the white grub is, on the whole, the most injurious insect, when we consider the great variety of plants it attacks, ranging from grass to nursery trees, and that its work, being beneath the surface, is not suspected until the injury is done. The crow has a keenness of sense that allows him to detect the unseen presence of the white grub, and a fondness for that fat morsel that induces him to capture it. A few years ago we had a chance to watch the operations of an assemblage of crows on a grub-infested lawn. Their skill in finding and dislodging the grub should have been witnessed by all opponents of the crow.

Boys on the farm can do good service and find much to interest them in making careful observations of the relations of different birds to insect life.—*American Agriculturist*.

ARBOR-DAY SELECTIONS.

Arbor-Day, though observed with less ostentation than in former years, has lost nothing of its great importance. The demand of Arbor-Day literature, or selections from writers on forestal topics, to be read by teachers or pupils on Arbor-Day, has been on an increase which justifies the addition of a few more of such extracts.

No attempt has been made at a systematic arrangement. They follow in the order in which they were collected :

"*Is it time for us in Ohio to plant trees for timber?*" Yes, yes! truly and most emphatically, my dear fellow-countrymen of Ohio, the time *has fully come* when we, the inhabitants of this glorious possession, should, as a duty, plant trees for timber.

* * * * *

The clearing of the land was a necessity for its occupation and application to agriculture. In this matter every landowner must be left free to decide for himself and for his own acres. No man nor set of men may hinder him from destroying or restoring his forests; nor can his movements be controlled by legislative en-

actments as in other countries, since the policy of our republic is that of *non-interference*. But we have also an axiom in our policy, that the best plans are ever those which conduce to the greatest good of the greatest number of the people; and whenever these may be presented in acceptable form, it is hoped and believed that such propositions will receive support.—*Dr. John A. Warder.*

In this rich and spacious land, it behooves us to be concerned rather with the preservation of our hills than their reconstruction by the toil of slaves; and I am ready to assert to you that there is no practicable method of holding the soil upon our steeper hills except the simple and natural method of covering them with wood.—*Dr. Dan. Millikin.*

The forest is a trust handed down to us from past ages, whose value consists not alone in the income derived from the wood, but also in the importance which it exerts, through its influence on climate and rainfall, on land culture. Its importance is not merely a question of the present day or of the present ownership, but it is also a matter which concerns the future welfare of the people. This is a truism beyond contradiction, but nevertheless it is daily disregarded by those who are indolent or selfish.—*Otto von Hagen.*

No forest without culture, no culture without forests.—*From the German.*

In looking at the question of tree-planting, I can scarcely conceive of it as a question of advantage or disadvantage. To my conception it is rather a question of position, and felt need, and not something that we may or may not do as we see fit, but something that is forced upon us as a necessity of the times in which we live.—*B. Gott.*

For three-quarters of a century we have been busily engaged in the business of lumbering; the time has now come when we must turn our attention to the business of forestry. The great wood-crop which nature lavished on our ancestors has been so diligently gathered that all our ingenuity will be taxed to continue the necessary supply for the growing wants of a rapidly increasing population.—*George B. Loring.*

“Men need to be taught that we have no moral right to follow blindly an instinct that leads only to present personal advantage, regardless of wide-spread future evils as a consequence; that we are but tenants of this earth, not owners in perpetuity; and that we have no right to injure the inheritance of those who succeed us, but rather a duty to leave it better for our having occupied it the allotted time. Men need to be taught to plant trees and their children to plant and love them. Owners of good lands in Maine or elsewhere, will, in the future, learn that their bleak fields, if judiciously planted with wood to the extent of forty per cent. of area, will produce on the remaining sixty per cent. more in all kinds of crops than the whole now does or can be made to do under any other possible course of treatment. Lands well sheltered can and do produce winter wheat in Maine as well as in New England or on the new lands at the west.”—*Maine Board of Agriculture.*

The true basis of National wealth is not gold, but wood. Forest destruction is the sin that has cost us our earthly paradise. War, pestilence, storms, fanaticism and intemperance, together with all other mistakes and misfortunes, have not caused half as much permanent damage as that fatal crime against the fertility of our Mother Earth.—*Felix L. Oswald.*

It is enough to know that when we plant a tree we are doing what we can to make our plant a more wholesome and a happier dwelling place for those who come after us, if not for ourselves. As you drop the seed, as you plant the sapling, your left hand hardly knows what your right hand is doing. But nature knows, and in due time the power that sees and works in secret will reward you openly.—*Dr. Oliver Wendell Holmes.**

Other friends may be false and unreliable ; the trees never.—*C. H., in Cincinnati Commercial, April 29, 1883.*

Old trees in their living state are the only things that money cannot command. Rivers leave their beds, run into cities and traverse mountains for it ; obelisks and arches, palaces and temples, amphitheatres and pyramids rise up like exhalations at its bidding. Even the free spirit of man, the only thing great on earth, crouches and cowers in its presence. It passes away and vanishes before venerable trees.—*Landor.*

As yet little or nothing has been done among us in the way of forestry. Here and there a few trees have been planted, rather for ornament than for utility. The taste for the comfort and beauty of trees is growing, however, and of the thousands who daily travel along our great highways, few are they who cannot admiringly appreciate the improvement of tree-planting about the village stations, the groups of ornamental trees clustering around the rural homesteads, the lines of trees along the country roads, and on the boundaries of cultivated fields.

These efforts of individuals to restore the sylvan beauties of the land are worthy of all praise.—*Dr. John A. Warder.*

The forest is a long investment, but a certain and safe depository for our means, where bountiful nature is ever adding to the capital. The trees are growing while we are sleeping, and a well-managed forest is ever increasing in value ; in it the rich lode may be worked continuously, the veins are never exhausted or cut off, like those of the mine, by horseback nor fault.—*Dr. John A. Warder.*

Tree-culture in this country is of great and growing importance ; by a wise system of introducing new plants we can add to our national wealth and prosperity. But little has been done heretofore to learn about the habits and qualities of trees which can be made of great value in the mechanical arts, and for other purposes ; indeed we know but little about our own trees.—*Horatio Seymour.*

*Extract from a letter to Dr. John B. Peaslee.

Let us each in our humble way, strive to add our humble mite to the sum total of our engagements of this humble life below by planting a few trees to live and testify of us after our heads are laid low and our hands are still in everlasting rest.—*B. Gott.*

THE TREE AND THE BIRD.

Let us remember that most of the small and beautiful birds that warble among the branches of our trees are insect-eating birds, and are our most intimate and devoted friends, ever working for our interests. Let us encourage them and their friendly efforts for our good in every possible way, by planting trees for their convenience. The tree and the bird! How astonishingly beautiful these organized objects of kind nature are in their life and their work. Each of them are grand conceptions of infinite wisdom, and are worthy of our attention and careful study, that would fill volumes of scientific and useful teaching. The tree and the bird! How intimately close is the relationship that exists between the departments of the natural world, between the vegetable and the animal kingdoms, between the merest vegetable and the highly organized beauty of the air. This relationship is easily touched, the one ministering to the daily requirements of the other. Would we have birds to cheer and to bless us, let us plant liberally the trees they love.—*B. Gott, of Arkona, Ontario.*

I regard the forests as an heritage, given to us by nature, not for spoil or to devastate, but to be wisely used, reverently honored, and carefully maintained. I regard the forest as a gift entrusted to us only for transient care during a short space of time, to be surrendered to posterity again as unimpaired property, with increased riches and augmented blessings, to pass as a sacred patrimony from generation to generation.—*Baron Ferdinand von Mueller.*

Keeping up a fit proportion of forests to arable land is the prime condition of human health. If the trees go, men must decay. Whosoever works for the forests works for the happiness and permanence of our civilization. A tree may be an obstruction, but it is never useless. Now is the time to work if we are to be blessed and not cursed by the people of the twentieth and twenty-first centuries. The nation that neglects its forests is surely destined to ruin.—*Elizur Wright.*

The farmer should endeavor to make his calling attractive to his children; he should introduce a little taste into his surroundings; it is not enough to own a house merely, but something should be done to make that house pretty, pleasing and attractive, a nucleus around which would gather the affections and sympathies of the entire family. The old homestead should be a thing of beauty as well as use; shady trees should overtop its rafters, bright flowers and fruit should find their place in the indispensable garden plot; in short, the whole should point it out as the well-loved home of a rational civilized Christian man, and not the abode of a mere animal. The children playing around the doorstep form their impression from their surroundings. The bleak and barren birth-place can produce no feeling of love, no wish to live the homely life of the farmer, but rather drives them from it and throw them into other pursuits.—*James Skead.*

The immense variety, the many and important uses, and the great beauty of our forests, must, naturally, attract the attention of an observer; and as the preservation and improvement of the forests, in their highest degree, are above private effort, require joint action, and must be effected on a large scale, on a system wisely begun and long continued by the men of one generation for those of the next; and by the application of science, taste and skill, not by one but by many men, not in one village or town, but in a country or state; it is wise for a government not acting merely for the present, but extending its forethought generously onwards, making its knowledge and wisdom an invested capital for future use, and desiring to do for coming generations, what they, when looking back, shall wish it had done; it is wise, prudent and patriotic for such a government to order a survey of the forests, among its other domains, that the people may know the sources of their wealth and its extent, and learn how to value, enlarge and enjoy it.—*Geo. B. Emerson, in Trees of Massachusetts.*

As moderators of the extremes of heat and cold, the benefits derived from extensive forests are undoubted, and that our climate is gradually changing through their destruction, is apparent to the most casual observer. Our springs are later, our summers are drier, and every year becoming more so; our autumns are carried forward into winter, while our winter climate is subject to far greater changes of temperature than formerly. The total average of snowfall is perhaps as great as ever, but it is certainly less regular, and covers the ground for a shorter period than formerly. Twenty years ago peaches were a profitable crop in Massachusetts; now we must depend on New Jersey and Delaware for our supply; and our apples and other orchard fruits now come from beyond the limits of New England. The failure of these and other crops in the older states is generally ascribed to the exhaustion of the soil; but with greater reason it can be referred to the destruction of the forests which sheltered us from the cold winds of the north and west, and which, keeping the soil under their shade cool in summer and warm in winter, acted at once as material barriers and reservoirs of moisture.—*Prof. Sargent.*

Trees are always beautiful, and the exhaustless resources of the Creator have been bountifully employed to endow them with ever-changing qualities of loveliness—qualities which are nowhere perhaps more strikingly illustrated than in our temperate climes, where the alternation of the seasons provide continual variation in the sylvan character of our landscapes.—*Francis George Heath in "Our Woodland Trees."*

IN PRIMEVAL WOODS.

This deep, primeval wood—how still!
Lo, silence here makes all his own;
Veiled shapes, with hands upon their lips
Stand round about his darkened throne.

The patient pleading of the trees—
How deep it shames the soul's despair!
In supplication moveless, mute,
They keep their attitude of prayer.

—*The Century.*

There is nothing that so strongly binds a man to a place as the bright memories of life due to cheerful homes and pleasant surroundings. These can not exist in a bleak and cheerless waste ; they can only be secured by timely and judicious planting of trees.—*F. B. Hough.*

A PLEA FOR THE FOREST.

“The Tree of the Field is Man’s Life.” —*Bible.*

Hail Forester with joy the dawn of day
That shall redeem our wood-land swept away !
Honor, and glory, and renown be thine,
Mortal thy legions, but their work divine.
The sylvan Deities shall bless the hand,
That rears their temples, saves our Native Land.

In other days ere Ruin held her sway,
Ere bandit hands relentless knew no stay,
How did the wild-wood’s quickening pulses thrill
When wakening Phoebus slowly climb’d the hill,
And fragrant morn led forth the feather’d train
Of mellow songsters with their sweet refrain.
What witching charms in cloudless nights of June,
The forest breathed beneath a lambent moon ;
Tranquil that breath, no jostling echoes rude,
To mar the dreamy sylvan solitude.

’Twas then the forest bloom’d an Aidenn wild,
But through its tangled depths the woodmen filed ;
Each girdled trunk where blaz’d the fatal band,
Stood seal’d and deaden’d for the hungry brand.

Year after year the fields of waving grain,
Sprang like a Phoenix from the forest’s flame.
Year after year Ambition’s route was trac’d,
Through fields deserted and through woods in waste.

Then, sought the Seasons gently to reprove
The stoic man that Pity could not move ;
First soft-eyed Spring, that ne’er was wont to stay,
Tardy she came and linger’d on the way ;
And Summer sigh’d where once she smiling play’d
Chasing the freighted Zephyrs through the shade.
Pale autumn with her melancholy air,
Trailing her rustling garments everywhere,
View’d in the fields the discontented swain,
Whose double labor scarce increased his gain.
Despondent Winter later came and stay’d,
Helpless to guard where man would soon invade.
And in succession as the seasons pass’d
The only watch-word was “revenge” at last.

O Traitor to thy truest friend the tree,
 Thy curse on it shall soon revert to thee!
 The wave of ruin sweeping o'er the land,
 Its tidal impulse started from thy hand.

Give back the robe to every barren hill,
 What once was Nature's should be Nature's still;
 Or else remorseless man thy fate is nigh.
 Behold each year on earth, in air and sky,
 All Nature's marshaling clans that augur woe,
 Crowding their vans to press their mortal foe.

How sweep the frigid gales from north to south!
 How fierce the summer sun! How long the drouth!
 The lands once fertile now have ceased to yield;
 Robbing the wood-land thou hast robb'd the field.

The protean clouds, the specters of the sky,
 Mock at thy ruined lands and pass them by;
 But when the fierce tornado leads them down,
 In fiendish glee they flood the famished ground.
 Once placid streams that gently sought the sea,
 Now rush a moment madly—cease to be.
 While tracings read in every sandy plain,
All will be lost in transitory gain.

As fair Aurora in the eastern skies
 Dissolves the mists that vanish as they rise,
 So science sheds effulgent rays of light,
 Lifts every doubt and charms away the night.

And now she whispers in her earnest mood,
Gold is but dross when compar'd with virgin wood.
 A Nation's wealth and hope and glory—all
 Sink in proportion as her forests fall.

Then give the leafy robe to every hill—
 What once was Nature's should be Nature's still.

Hail Forester with joy the dawn of day
 That shall redeem our wood-land swept away!
 Honor and glory and renown be thine;
 Mortal thy legions but their work divine.
 The sylvan Deities shall bless the hand,
 That rears their temples, saves our Native Land.

JOHN E. DOUGLASS, JR.

HONEY LOCUST.

Gleditschia triacanthus.

By PROF. J. L. BUDD,Agricultural College, Ames, Iowa.

This fine native tree has received more attention in Europe than here. It has there sported into different varieties, with extremely varied habits of growth. This tendency to variation is exhibited in growing its seedlings, and we even notice that our native trees are varied in time of flowering, color of petals, habit of growth, and even in hardiness of trees when grown on the prairie. Our correspondence continually indicates a common belief that this is a true locust, and that like the black-locust, it is noted for sprouting and liable to the attack of the borer. We wish to repeat that it *does not sprout* any more than the maple, and that no form of insect has yet molested it, except a long-necked beetle often found on potato vines, called by Harris *Cantharis conerea*. Plants in nursery and young hedges are sometimes set back by these hungry fellows at work on their foliage. The only effect observed, aside from a brief check of growth, is that the plant so treated becomes more thorny than those unmolested. Several American writers, following Loudon more closely than is creditable, say: "The wood of the honey-locust, when dry, weighs fifty-two pounds to a cubic foot. It is very hard, splits with great *difficulty*, resembling in this and some other respects that of the common locust." Loudon really wrote, "Splits *with great facility*," which agrees with my practical experience. I have experience with this timber as a fence material, dating back nearly twenty-five years. Fence rails of that age, made from tough native timber, nailed on posts, have outlasted three sets of posts and two sets of red oak rails, and the locust rails are yet mostly good. These rails were split and nailed on in June and July. Posts made from native timber, seasoned one summer before setting, mixed with white-oak posts treated in the same way, lasted equally well. Some *long* honey-locust posts in this fence, when rotted off, were inverted and lasted ten years longer than a new fence. It is well to say that young timber rapidly grown on our rich prairie soil, will in no case prove as durable as our old native trees. But recent observations in the groves of Illinois of twenty-five years' growth, makes the fact evident that as growth is impeded by standing *thick*, and complete occupancy of the soil by roots, the

proportion of the sap-wood becomes small, and the heart-wood becomes firm and dry, as noted in the thick growths of the poplars. As fuel, the honey-locust rates in value with the red-oak.

The seed ripens in autumn and may be gathered any time during the fall or winter. But the sooner pods are gathered after falling to the ground the better. In Cedar county, on the Cedar river, and at many points on the Iowa, Des Moines, Missouri, and indeed most of the rivers of the State, pods may be gathered in quantity grown on thornless trees.

Before planting, scald the seeds severely. Part of them will swell. Sift these out with a coarse fanning mill sieve. Scald the remainder again; repeat scalding and sifting until all are swollen. The ground should be ready and the seeds at once planted. They will come up in two or three days if the weather be favorable, and their upright growth is so rapid that less care is needed in picking out the weeds from among the plants, than with any other forest-tree seedlings. Keep the weeds down with good culture during the summer. Take up the plants in the fall and heel in carefully where water will not stand. If left standing in the seed-bed, the plants are often injured during the winter. After the first year the plants are perfectly hardy, if seeds from our native trees be used. We may here note that the seed sold in the eastern markets is mostly many of the plants produced from foreign honey-locust seed, prove as tender in our climate as the peach-tree. No valuable tree in our list bears transplanting with as little check to growth as the honey-locust.

DEMAND FOR TIMBER.

The farmer, or any one who now undertakes to raise forests for the production of timber, need entertain no fears as to finding a market for whatever timber he may raise. The amount of timber annually used in the various arts is simply enormous, and increases from year to year. This great demand for timber of various kind causes the supply to decrease, which will necessarily result in a rise of the prices. In Europe the prices of lumber double about every twenty years. The great abundance of forests in this country, and the ready access to them, have heretofore prevented such an increase in the price here, but the time has come when we may confidently expect a similar advance in the prices of all timbers.

A glance at the development of the furniture trade during the last ten or twenty years will satisfy every one that the demand for timber has been constantly increasing, though iron has, in some instances, been used instead of wood.

What a draining this one of the many industries using wood will cause upon the forests, may be judged of from the following article which is taken from *The Furniture-worker*, Vol. VI, No. 3 :

THE FUTURE OF THE FURNITURE TRADE.

The furniture trade of the United States has assumed immense proportions, surprising alike to our foreign competitors and to ourselves. This trade, instead of decreasing, as some suppose it will, should have a steady and healthful increase in the coming years. There doubtless will come periods of depression. Indeed, we have for some little time past been experiencing a reactionary condition in the consumptive demand, which has served as a material check on the progress of the trade, but this, we believe, is but a brief interruption which will prove in the end as beneficial as it now seems hurtful.

In making our estimates of the future demands for furniture, we should not fail taking into account—first, the natural increase in its use ; second, the displacement of old and worn-out or broken furniture for new and more artistic designs ; third, the replacement of that destroyed by fire, etc. In another decade the population of this country will amount to at least seventy millions of people, and during that period our exportation of furniture must largely increase. It will be surprising if it does not double or treble. To supply the requirements of these additional millions of population, and this increased trade, there must be great demands upon our manufacturers.

It must be remembered, also, that with this increase in the demand there is a growing tendency to the more elegant, elaborate and artistic. This, of itself, makes an increase of requirement upon the manufacturers.

Old bedsteads are being constantly displaced by the folding bed, or that richly carved ; the old wood-bottom chair must give way to the more elegant "easy chair," or "reclining chair," or "spring rocker."

The old wooden settee of the days of our forefathers has been put aside to make room for the more comfortable "sociable," or "*tete-a-tete*." The things of the past are being revolutionized, and modern makes and modern ideas are brought into requisition. This wonderful evolution is going on all the while, and is increasing in extent yearly, as the number of improvements and designs multiplies. The demand for new furniture for replacing that in actual use is simply wonderful—so great, indeed, that few can fully appreciate the extent of this substitution.

Closer competition will force upon manufacturers more and more the necessity of doing better work—creating new designs. This will result naturally in an enlargement of demand, and consequently compel manufacturers to enlarge and improve their plants, substitute new machinery and better facilities for turning out work. This is true economy, and very many manufacturers fully understand the truth of our proposition.

The replacement of all the broken and worn-out furniture will afford our manufacturers a vast amount of work.

Think of all the public buildings, and pleasure and health resorts, and educational and charitable institutions, the furniture of which is now in use and deteriorating. The aggregate amount and value of all this defies calculation. What is its average life ? At best but a few years, when it must all be replaced—some of

it right away—but all in the not far distant future. Think of this mass of furniture wearing out, being broken and destroyed, and this, too, in addition to that in use in nearly 11,000,000 of homes, and it must certainly occur to every reader that there is no more promising field in the world for the manufacture of furniture than this country. There is no reason for thinking this demand will grow less, for as our population increases and new settlements spring up, there will inevitably be a greater demand. There may be dull times in the future as in the past, but there cannot be permanent stagnation. The requirements of sixty to seventy million of active and industrious people will always be great, and as we have shown will furnish an increasing demand for the products of our furniture manufacturers. The manufacturer, the inventor, and the designer will ever be important factors in our nation's trade.

ON THE VARIABILITY OF THE ACORNS OF QUERCUS
MACROCARPA, *Michx.*

By JOSEPH F. JAMES,
Prof. of Botany and Geology at the Miami University, Oxford, O.

It is a well-known fact that all forms of life are subject to variation, but to what extent the variation is carried is a subject of much discussion. The almost universally acknowledged belief now is, that all the species of any one genus are the descendants of a common ancestor, and more remotely, the different genera of an order are likewise the modified descendants of a single form. Yet, notwithstanding this general belief, many are unwilling to admit that we see in the life about us, any tendency toward the formation of a new species.

Now it is much to be doubted if such a thing as a species has any existence in nature. The term is one which scientists have agreed to apply to an assemblage of individuals, which have certain characteristics in common; but certain of these characteristics may be wanting in some individuals; and in a large number of individuals of one acknowledged species, we may and do find certain features changing so that one species merges into another so imperceptibly that the line to be drawn between them is indistinguishable. This has come to be recognized to such an extent that many naturalists now hold that the true method of classification is to group around certain centers, forms which have something in common. To say that this or that form belongs to a certain group of which some other form is the type.

It is not the purpose here, however, to enter on a discussion of the meaning of the term species, nor of the limits of species, but to call attention to certain variations which have been noticed in a single species of plant, viz.: the *Quercus macrocarpa*, Michx., the Bur or Mossy Cup Oak. This tree, one of the finest of our Oaks, is remarkable for the peculiar moss-like fringe which borders the cup of the acorn, and which is at present in no other species of *Quercus* of North America. The leaves of the tree are very variable, both in size and in outline. They are lobed, cut, pinatifid and parted in such various degrees that it is hardly possible to find two of them alike; and leaves from the same tree would, if found in a fossil state, be ascribed to entirely different species.

It is, however, to the acorns which I wish to call attention. According to Mich-

aux, these "are oval, and inclosed for two-thirds of their length in a thick rugged cup, which is generally bordered along its upper edge with fine, long flexible filaments. Sometimes, however," he adds, "in compact forests, or in very temperate regions, the filaments do not appear, and the edge of the cup is smooth and bent inward."* Gray says,† that the cup is "deep, thick and woody, conspicuously imbricated with hard and thick-pointed scales, the upper ones awned, so as usually to make a mossy fringed border; acorn broadly ovoid, half immersed in or entirely inclosed by the cup. . . . Cup very variable, especially in size, from 9" to 2' across.

The series of sketches I have prepared illustrate this variability of the acorn in a remarkable manner. Figure 1 is the type form with the acorn two-thirds immersed in the cup, and the latter furnished with a delicate fringe on the upper edge. Figure 2 is from a specimen from Hardin county,‡ Ohio, in which the acorn is almost wholly concealed in the cup, and the fringe almost hides it from view. Figure 3 is a top view of a widely different form. In this the cup is nearly an inch and a quarter across, and the fringe projects at least half an inch all round, making it two and a quarter inches in diameter. The acorn projects very slightly above the rim of the cup. Figure 4 goes again to the other extreme, for here we have a very small acorn, the cup slightly fringed, and leaving only a small portion of the apex of the nut exposed. In figure 5, we have a cup one and a half inches in diameter, in which the fringe has grown down inside the cup, lining it all around, and forming a soft bed for the nut to rest on.§ In figure 6, we have an acorn in which the cup conceals three-fourths of the nut, and is almost destitute of any fringe. In figure 7, we have an entirely different form again, for here the cup conceals about one-half the acorn, the walls are very thin, and it is entirely destitute of any fringe whatever. Figure 8 represents the variety *Olivaceformis*, Gray, from Hardin county, Ohio. Here we see an oblong acorn, with a cup half concealing it, and with a very slight fringe.

Thus we have here eight different looking acorns, all known to belong to the same species, and more than one to be found, perhaps, on the same tree. There are all gradations from no fringe at all on the cup, to one which has a fringe half an inch long. The cups are shallow and deep, thick and thin, extending half way up the acorn, reaching to its apex, or almost entirely concealing it. ||

It seems to me that in this marked tendency to variability in the *Quercus macrocarpa*, we have the beginnings of what might, in the course of time, come to be considered several distinct species. If the tree springing from the acorn distinguished by the thin-walled cup, destitute of fringe, should produce a preponderance of acorns of the same character, and if this character should be transmitted from generation to generation, as we have every reason to suppose may be the case, then in the course of time a new variety or species will have arisen. If, further, the acorn with the long fringe produces in its turn a tree bearing acorns like the original one, and its

*North Am. Sylva, vol. i, p. 34. The figure given by Michaux shows the character admirably.

†Manual, p. 451.

‡This and the following figures are taken from specimens given me by Dr. John A. Warder. Specimens from which figs. 2 and 8 were made, were collected by Mr. Hampton, of Hardin county.

§The nut is not shown in the figure, only the cup showing the fringe lining the interior of it.

||The oak said to more closely resemble our *Q. macrocarpa*, which, by the way, is principally confined to the Mississippi valley, is the *Q. cerris* of Europe. This is as variable as the *Q. macrocarpa*. It is a native of middle and south Europe, and of western Asia, and Loudon in his *Arboretum et Fruticetum Britannicum*, remarks on the tendency to sport which is characteristic of it. He gives no less than fourteen varieties of it, and these vary from forms with pinnatifid or sinuate leaves, to dentate, to subevergreen, and even evergreen leaves. He says nothing about any variation in the fruit.



Quercus macrocarpa
Michx.

characters be also transmitted and finally fixed, another and a widely different variety or species from the thin-walled variety will have arisen. If now we imagine through any cause all the immediate forms to become extinct, and only the extremes to remain, it would be hard to realize that two such different looking forms could have arisen from one which produced both kinds of acorns.

Such facts as have been given in this article, and cases of the same kind are by no means rare, should make naturalists careful how they make new species. It is much more creditable in the present state of our knowledge to reduce the number of species than to increase it. For it is very much easier to arbitrarily establish the bounds of a species, and to say this is one, and that another, than to say this species and that species are forms which in the past were closely connected; and to say that they ought now to rank as varieties, either one or the other, or else of some other species possessing characters common to both.

The following article, which is especially written for this report, although speaking of the forestal relation of Dakota, is one of general interest, and well merits the careful perusal of every one interested in forestry.

A. L.

FORESTRY IN DAKOTA.

By WATSON E. BOISE,

Bellevyria, Dakota.

In presenting a few thoughts on forestry in Dakota, I wish first to speak of the native forests. While Dakota is essentially a prairie country, quite a number of the counties had years ago considerable timber, sufficient, indeed, to call for the erection of saw-mills, and resulting in quite a large local output of lumber.

Still I do not think that the forest area amounted to more than two per cent. of the whole area of the territory at the time of the first settlements. For the most part this growth consisted of a fringe of scragly trees along the bluffs and in the ravines adjacent to the rivers. Streams, of any size worthy of mention, quite generally had this fringe of timber, consisting principally of oaks, cotton woods, box elders, balm of Gileads, elms and the choke cherry. With the incoming of settlers began the slaughter of these "tree fringes" for fuel, and now there is in most sections hardly enough left to show what was once there.

But there seems to be good reason to believe that, in a former age, this territory was much more thoroughly covered with forests.

On my farm is a large coulee. Taking off the black loam of about 15 inches in the "bottom," *i. e.*, between the bank of the coulee and the bluff, we find a subsoil very easily dug and seemingly veritable leached ashes, both in color and appearance, and I am of the opinion that an analysis would prove it to be such.

In years past coal has been found here and there in small quantities along the Missouri river, more especially to a considerable extent. It has been quite extensively mined for at least five or six years on the line of the Northern Pacific Railroad, some distance west of Bismarck. The past two or three years many discoveries of coal have been made, indicating that these deposits are of considerable extent. Indeed, it is the sanguine expectation of many that this has solved the

fuel question for us. The coal is usually lignite; when properly used proves a very good fuel, and is taking the place of other fuel, to a considerable extent, in certain localities.

Of tree-culture in Dakota as a whole, I cannot speak very encouragingly, though many of those who are skilled in this work and give much time to experiments are quite enthusiastic, and would also make us see (in our mind's eye) great belts of timber on these illimitable prairies to be grown within the period of ten or twenty years. In the Southern and older settled portion much of this work has been done, and with such a good degree of success as that groves of trees of considerable height and size are quite frequent.

But this is not true to any extent in North Dakota. This is partly due to the fact that we have not lived here as long, and are only just learning how to do the work properly. Yet I am inclined to think that we can *never* hope to be as successful as they, and especially because our growing season for trees is very short. At least other conditions must be very favorable to compensate for the shortness of the season.

Of the many causes leading to failure perhaps none is more potent than the fact that very few have been rightly handled, and this poor handling comes in in many ways.

It has been the custom of very many, who have come to stay only a short time, to take a tree claim, because it can be held without residence. Usually these speculative holders, holding the claims as long as possible without doing any work, have sold out their right to some one else who, quite likely, will do likewise. It is thus often the case that tree claims are held for a considerable term of years without a farther fulfilling of the timber culture law than the mere breaking of five to ten acres, often not even this.

Even when these non-residents desire to properly plant and cultivate groves on their claims, they must usually depend upon whomsoever they can secure to do the work. This work is being done for the pay, not for the laudable desire of doing a good job, and in the nature of the case this can only result expensively and disastrously. There being only one-fourth out of the four in a section to be taken as a tree claim, and many of these taken by speculators, the true claims are taken far ahead of actual settlement, and only a few residents have them adjoining their homesteads, and commonly not nearer than ten to fifteen miles, and often twenty to thirty.

If only actual residents could hold tree claims (and this, I suppose, was the real intent of the law) many more would have them adjoining their farm. They would then take pains in caring for them, and their efforts would be much more successful. But when they are far away, and other work is pressing, if tended at all it is likely to be only once, or at most twice a season, and that done late and in a slipshod way.

Another of the greatest difficulties arises from the law itself, as it requires the planting of trees or seeds after only one year's cultivation. To be successful more time must be given to secure a thorough rotting of the tough prairie sod, a thorough pulverization of the soil, and that to a good depth, at least eight inches.

Seeds have often been used because cheaper and more easily planted. True, this work has too often been done too carelessly, either because the holders only wish to have something to swear by, or because they thought the seeds would grow if only got into ground as it may chance. But however well done, sowing seeds has, in most cases, proved to be poor economy, as the ground is quite often too dry to give them a thrifty start, and cuttings fare much the same.

As work rushes in the spring, tree cultivation is too generally put off, being

very seldom begun soon enough, and is often continued too late, not leaving the trees sufficient time to properly mature the season's growth.

Again, many young groves are not properly protected against prairie fires, and are thus destroyed. They are killed by drouths in summer and cold in winter. The dry, hot winds greatly aid the drouths by rocking and unsettling the tree and loosening and drying the soil. Winter-killing is often caused by the winds in winter blowing the soil away from the roots, and this is especially the case when the soil about the tree is free from weeds or mulching.

These experiences have taught us that careless work will not and cannot succeed. They have taught us that it is only by setting out with the determination to do our best, that we may one day sit beneath the shade which our hands have helped to rear. Experience proves that we should proceed somewhat as follows: Secure small well-rooted trees and heel them in the fall that they may be ready for early planting in the spring.

Because of the shortness of the season, cultivation must begin early and must be frequent, that the trees may be stimulated to an early and rapid growth. Cultivation should cease by June 15th—certainly before July 1st—that the season's growth may bear ample time to mature before the early frosts, also to give the weeds time to grow to hold the snow in winter. Mulching helps the growth wonderfully and aids the weeds in holding the snow. To the careful planter the greatest cause for anxiety has come from fear of drouths and winter-killing. Drouths are to be feared perhaps quite as much as winter-killing, and plenty of mulching will, to a large extent, remove the dangers of both.

Tree culture has proved a failure in most cases. It is only the few that have succeeded. The N. P. R. R. tried for two years, I think, the planting of large numbers of small trees along its line in Dakota to take the place of snow fences in protecting the "cuts." They then gave it up as an unprofitable experience.

Do I then think that we shall not succeed to any considerable degree? By no means! Already where the country has been settled eight to ten years nice young groves may be found. Where there is something of a protection in the shade of hills or where there are belts of timber, or in towns, the largest measure of success is to be found. Some sort of protection from the northwest winds, especially is desirable. The greatest success, too, has been with our native trees, cotton-woods, box-elders and white-ash. White-elm, white-willow and hard-maple have proved less successful.

Quite recently considerable attention has been given, by nurserymen and others, to the growing of evergreens. With protection for a couple of years it is hoped that they may become the tree for wind-breaks. Of evergreens Norway spruce, native white-spruce and Scotch pine seem to be more promising.

There must still be years of experiment to learn the hardiest kind of trees, and those otherwise best adapted to our needs. This stage to be followed by a considerable period of patient waiting, under the direction of skillful hands, before we can see these aforetime bleak prairies thickly dotted with thrifty groves, alike useful and grateful to the eye.

THE SUGAR MAPLE BORER.

Glycobius speciosus—(*Clytus speciosus*, Gay).

By L. F. ABBOTT,
In American Rural Home.

There are a few beetles which are not ugly. In fact there are a number of species that are very beautiful to look upon when beauty is under consideration, but when the destructive habits most of them inherit are the subject of thought, we lose something of our respect for their beautiful dress and wonderfully formed proportions. Of this latter class is the beetle of the sugar-maple borer, the old *Clytus speciosus* (beautiful *Clytus*) of Gay, but now given the name of *Glycobius speciosus*. Most entomologists mention this beetle in their writings, but nothing new seems to have been found out concerning this insect since Harris wrote of it thirty years ago, except to dress it up in a new name and pass it along with Harris' old description.

The maple borer is much more common than is generally supposed. Often our beautiful rock-maple shade-trees have a sickly look in a portion of their tops. Upon some of the branches the leaves assume a fiery red hue, and after a while the leaves wither, and the next year the dry branches betoken disease at work in a vital part of the tree.

While these appearances may not always be the effect of the depredations of our *Glycobius*, or maple tree borer, they are very frequently the result of his presence in the trunk, where he has mined beneath the bark, cutting off the circulation of the sap to a degree highly injurious to the welfare of the tree.

Injuries to our maples, often laid to the charge of the *Tremex columba*, are due to a lodgement made by the beautiful *Glycobius*, puncturing the sound wood until partial decay affords a favorite breeding place for the *Tremex*.

Inspections of the maples in many localities will reveal the presence of the larva of the *Glycobius speciosus* or the work of destruction they have accomplished, the insect having matured and flown away. Then the question arises, if these beetles are so plentiful, why are they not oftener seen and captured? There is something curious about that. Undoubtedly thousands mature every summer and take wing. Many probably fall a prey, while in the larva state, to the unerring instinct of the little, but much maligned woodpecker, who taps *Glycobius*' burrow, harpoons him in the back and makes a breakfast of him these cold

December days; or perchance Mrs. woodpecker quiets her hungry youngsters in summer with sweet morsels from his carcass.

Then, again, the *Pimpla lunator*, with its borer more than four inches long, with instinct as wonderful as that of his feathered enemy, although an insect of but a day, as it were, like the victim it pierces; she, with more than human sagacity in this respect, drills her hair-like ovipositor through perhaps two inches of solid wood at the exact spot where the larva of *Glycobius* burrows, pierces her victim and deposits an egg, which hatches, and *Glycobius* becomes the host to foster the little *Pimpla* larva until it reaches maturity, when he emerges a full-winged *Pimpla*; but *Glycobius* never rallies from such usage, but dies with consumption in the midst of his riotous living.

But it is a little singular that so few of these beautiful beetles are seen the latter part of summer after they have taken wing. The specimen I have before me, captured more than a dozen years ago, I might have duplicated perhaps half as many times in those years, but often a whole season will pass without once coming across this insect. This beetle is quite likely to be remembered from its black and gold markings and the peculiar golden W on the base of its wing-covers. This letter we'll take to be the initial to the appropriate motto—"Winning, Wicked Wretch."

This beetle attains a little more than one inch in length, and reaches maturity in July, soon after which the female deposits her eggs in the crevices of the bark of the maple. Close examination of the surface of the bark will disclose the whereabouts of the young larva as it penetrates the tree, by its sawdust borings, but their presence can be more readily detected the summer following, after the larva have attained some size. It should then be hunted and destroyed.

Preventive measures to deter the females from depositing their eggs, or destroy them after they are laid, I believe might be employed by applying to these trees, two or three times in July and August, an emulsion of soap and kerosine oil or crude petroleum.

The larvae of *Glycobius*, like most of the wood-borers, takes three years to mature. As it has a voracious appetite and assumes quite large proportions—nearly an inch and a half in length and a third of an inch broad—the mischief a single specimen will work in a tree is considerable; it is generally the case, however, that a pair will start from about the same point, one burrowing just beneath the outer bark to the right, the other to the left, taking an oblique downward direction, and frequently I have known trees six to eight inches in diameter to be girdled within an inch or two before the insect turned within the solid wood.

On young, smooth-barked trees, these burrows are quite readily seen by the practiced eye, but on older trees, when the outer bark has assumed a rough condition, it is more difficult to find and follow their excavations.

The only remedy after the worms have made a lodgement is to find their burrows, and with chisel or small gauge cut them out.

MISCELLANEOUS ITEMS OF INTEREST TO FORESTERS.

TO MEASURE THE HEIGHT OF A TREE.

To approximately estimate the height of trees requires considerable practice. Some years ago, when walking through one of the parks in the city of Cincinnati, I met two of my friends looking at a tree, and discussing its height. "It is about 100 feet high," said the one. "I think it is about 80 feet," said the other. We then measured the tree, to find that it was not more than 60 feet high. In my younger years, I knew a forester who was noted for his ability in accurately estimating the height of trees by simply looking at them. Upon being questioned how he acquired this ability, he replied, "by practice." He used to estimate the height of trees and then measure them. The following brief article taken from *Youth's Companion* tells how the height of a tree may be ascertained:

"There is a very simple way of measuring the height of a tree, which can be practiced by any one on a sunny day or bright moonlight. All the apparatus that is necessary is a straight stick of any length. Draw a circle with a radius (half the diameter) or a little less than the length of the stick. This will be done by holding one end of the stick, say two inches from the end, and moving the other end around, making the circle with a knife or chip. Then place the stick in the ground exactly in the center of the circle, perfectly upright, and press it down until the height of the stick is exactly the same as the radius of the circle. When the end of the shadow of the stick exactly touches the circle, then also the shadow of the tree will be exactly in length the same measurement as its height. Of course, in such a case, the sun will be at an exact angle of forty-five degrees. Measurements of this character can be best effected in the summer, when the sun is powerful, and has reached to a good height in the heavens, and when the trees are clothed with living green, so as to cast a dense shadow. To many to whom this idea may not have occurred it might be made annually a matter of interest thus on warm summer days to take the height of prominent trees, and so to compare growth from year to year."

DROUGHTS.

The droughts of Eastern America are reported as follows :

- In 1621, 24 days in succession without rain.
- In 1630, 41 days in succession without rain.
- In 1657, 75 days in succession without rain.
- In 1662, 30 days in succession without rain.
- In 1674, 45 days in succession without rain.
- In 1680, 81 days in succession without rain.
- In 1694, 62 days in succession without rain.
- In 1705, 40 days in succession without rain.
- In 1715, 45 days in succession without rain.
- In 1728, 61 days in succession without rain.
- In 1730, 92 days in succession without rain.
- In 1741, 72 days in succession without rain.
- In 1749, 108 days in succession without rain.
- In 1755, 42 days in succession without rain.
- In 1762, 123 days in succession without rain.
- In 1773, 80 days in succession without rain.
- In 1791, 82 days in succession without rain.
- In 1802, 23 days in succession without rain.
- In 1812, 28 days in succession without rain.
- In 1856, 24 days in succession without rain.
- In 1871, 42 days in succession without rain.
- In 1875, 27 days in succession without rain.
- In 1885, 20 days in succession without rain.

The longest drought reported in America was in the summer of 1762; no rain fell from the first of May to the first of September, making 123 days without rain. There are seven droughts reported in the seventeenth century averaging 51 days each, ten in the eighteenth century averaging nearly 75 days each, and up to the present time six in the nineteenth century averaging 27 days each.—*Forest Leaves*, Sept., 1886.

THE BEST FUEL

The following quotation from an anonymous writer will be of interest :

“ Wood is the healthiest, because it contains a large amount of oxygen; coal has none, hence in burning it the oxygen necessary for its combustion must be supplied from the air of the room, leaving it ‘closely’ oppressive. A coal fire will go out unless it has a constant and large supply of air, while wood, with comparatively little, having a large supply within itself, turns to ‘live coals.’ Close-grained heavy wood, like hickory or oak, gives out the most heat, while pine and poplar

being open grained, heat up the quickest. The value of fuel as heating material, is determined by the amount of water which a pound will raise to a given temperature; thus one pound of wood will convert forty pounds of ice to boiling water, while a pound of coal will thus heat nearly eighty pounds of ice—cold water; hence, pound for pound, coal is as good again for mere heating purposes as wood is as good again as peat, which is the product of sedges, weeds, rushes, mosses, etc. But if a ton of coal, that is, 28 bushels, or twenty-two hundred and forty pounds, cost five dollars, it is about equal to the best wood at two dollars and a quarter a cord. Coal at twelve dollars and a half a ton is as cheap as wood at five dollars and a half per cord. It would be more equitable if wood was dry to sell it by the pound. Such is the custom in France. For heating sleeping apartments, wood should be used."

MARCUS BULL'S TABLE—SHOWING THE HEATING QUALITIES OF WOOD.

Number.	Common names.	Botanical names.	Specific gravity of dry wood.	Weight of dry wood in a cord.	Products of charcoal from 100 parts of dry wood, by weight.	Specific gravity of dry charcoal.	Pounds of charcoal in one bushel.	Pounds of charcoal from one cord of dry wood.	Bushels of charcoal from a cord of dry wood.	Time that 10°(F.) of heat were maintained by combustion of 1 pound.	Percentage of value for fuel, Shellbark Hickory being 100.
1	White Ash.....	Fraxinus Americana.....	0.772	3,450	25.74	0.547	28.78	888	31	h.m.	77
2	Apple tree	Pyrus malus.....	0.697	3,115	25.00	0.445	23.41	779	33	6.40	70
3	White Beech.....	Fagus sylvatica.....	0.724	3,236	19.62	0.518	27.26	635	23	6.00	65
4	Black Birch	Betula lenta.....	0.697	3,115	19.40	0.428	22.52	604	27	6.00	63
5	White Birch.....	Betula alba, var. populifolia	0.530	2,369	19.00	0.364	19.15	450	24	6.00	48
6	Butternut	Juglans cinerea.....	0.567	2,534	20.79	0.237	12.47	527	42	6.00	51
7	Red Cedar.....	Juniperus Virginiana	0.565	2,525	24.72	0.238	12.52	624	50	6.40	56
8	Chestnut.....	Castanea vesca, var. Americana.....	0.522	2,333	25.29	0.379	19.94	590	30	6.40	52
9	Wild Cherry	Cerasus Virginiana	0.597	2,668	21.70	0.411	21.63	579	27	6.10	55
10	Dogwood.....	Cornus Florida	0.815	3,643	21.00	0.550	28.94	765	26	6.10	75
11	White Elm.....	Ulmus Americana	0.580	2,592	24.85	0.357	18.79	644	34	6.40	58
12	Sour Gum.....	Nyssa multiflora.....	0.703	3,142	22.16	0.400	21.05	696	33	6.20	67
13	Sweet Gum.....	Liquidambar styraciflua.....	0.634	2,834	19.69	0.413	21.73	558	26	6.00	57
14	Shellbark Hickory.....	Carya alba	1.000	4,469	26.29	0.625	32.89	1172	36	6.40	100
15	Pignut Hickory.....	Carya porcina	0.949	4,241	25.22	0.637	33.52	1070	32	6.40	95
16	Red-heart Hickory.....	Carya	0.829	3,705	22.90	0.509	26.78	848	32	6.30	81
17	Witch Hazel.....	Hamamelis Virginica	0.784	3,505	21.42	0.368	19.36	750	39	6.10	72
18	American Holly	Ilex opaca	0.602	2,691	22.77	0.374	19.68	613	31	6.20	57
19	Hornbeam	Carpinus Americana.....	0.720	3,218	19.00	0.455	23.94	611	25	6.00	65
20	Mountain Laurel	Kalmia latifolia.....	0.663	2,963	24.02	0.457	24.05	712	30	6.40	66
21	Sugar Maple.....	Acer saccharinum.....	0.644	2,878	21.43	0.431	22.68	617	27	6.10	60
22	Soft Maple	Acer rubrum.....	0.597	2,668	20.64	0.370	19.47	551	28	6.00	54
23	Large Magnolia	Magnolia grandiflora.....	0.605	2,704	21.59	0.406	21.36	584	27	6.10	56
24	Chestnut White Oak...	Quercus prinus palustris	0.885	3,655	22.76	0.481	25.31	900	36	6.30	86

MARCUS BULL'S TABLE—Concluded.

Number.	Common names.	Botanical names.	Specific gravity of dry wood.	Weight of dry wood in a cord.	Product of charcoal from 100 parts of dry wood, by weight.	Specific gravity of dry charcoal.	Pounds of charcoal in one bushel.	Pounds of charcoal from one cord of dry wood.	Bushels of charcoal from a cord of dry wood.	Time that 10° (F.) of heat were maintained by combustion of 1 pound.	Percentage of value for fuel, Shellbark Hickory being 100.
25	White Oak	<i>Quercus alba</i>	0.855	3,821	21.62	0.401	21.10	826	39	6.20	81
26	Shellbark White Oak...	<i>Quercus obtusiloba</i>	0.775	3,464	21.50	0.437	22.99	745	32	6.20	74
27	Barren Scrub Oak.....	<i>Quercus Catesbæi</i>	0.747	3,339	23.17	0.392	20.63	774	38	6.30	73
28	Pin Oak.....	<i>Quercus palustris</i>	0.747	3,339	22.22	0.436	22.94	742	32	6.20	71
29	Scrub Black Oak.....	<i>Quercus banisterii</i>	0.728	3,254	23.80	0.387	20.36	774	38	6.30	71
30	Red Oak	<i>Quercus rubra</i>	0.728	3,254	22.43	0.400	21.05	630	30	6.20	69
31	Barren Oak.....	<i>Quercus ferruginea</i>	0.694	3,102	22.37	0.447	23.52	694	29	6.20	66
32	Rock Chestnut Oak.....	<i>Quercus prinus monticola</i>	0.678	3,030	20.86	0.436	22.94	632	28	6.00	61
33	Yellow Oak.....	<i>Quercus prinus acuminata</i>	0.653	2,919	21.60	0.294	15.52	631	41	6.10	60
34	Spanish Oak.....	<i>Quercus fulcata</i>	0.548	2,449	22.95	0.362	19.05	562	30	6.20	52
35	Persimmon	<i>Diospyros Virginiana</i>	0.711	3,178	23.44	0.469	24.68	745	30	6.30	69
36	Yellow Pine.....	<i>Pinus mitis</i>	0.551	2,463	23.75	0.333	17.52	585	33	6.30	54
37	Jersey Pine.....	<i>Pinus inops</i>	0.478	2,137	24.88	0.385	20.26	532	26	6.40	48
38	Pitch Pine.....	<i>Pinus rigida</i>	0.426	1,904	26.76	0.298	15.68	510	33	6.40	43
39	White Pine.....	<i>Pinus strobus</i>	0.418	1,868	24.35	0.293	15.42	455	30	6.40	42
40	Yellow Poplar.....	<i>Liriodendron tulipifera</i>	0.563	2,516	21.81	0.383	21.15	549	27	6.10	52
41	Lombardy Poplar.....	<i>Populus dilatata</i>	0.397	1,776	25.00	0.245	12.89	444	34	6.40	40
42	Sassafras	<i>Sassafras officinale</i>	0.618	2,762.	22.58	0.427	22.47	627	28	6.20	59
43	Wild Service	<i>Amelanchier Canadensis</i>	0.887	3,964	22.62	0.594	31.26	897	29	6.20	84
44	Sycamore	<i>Acer pseudo-platanus</i>	0.535	2,391	23.60	0.374	19.68	564	29	6.30	52
45	Black Walnut	<i>Juglans nigra</i>	0.681	3,044	22.56	0.418	22.00	687	31	6.20	65
46	Whortleberry	<i>Vaccinium corymbosum</i>	0.752	3,361	23.30	0.505	26.57	783	29	6.30	73

TABLE SHOWING THE PURPOSES FOR WHICH THE MORE IMPORTANT TREES MAY BE PLANTED.

Common names.	Recommended for—
Silver-leaf Maple.....	Shelter, ornament, fuel.
Sugar-maple, Black Maple....	Sugar, ornament, fuel.
Box-elder, Ash-leaf Maple.....	Fuel, shelter, ornament.
Red Maple	Shelter, ornament, fuel.
Rock Maple, Sugar-maple.....	Sugar, ornament.
Balsam Fir.....	Shelter, balsam, ornament.
Douglas Spruce... ..	Shelter, ornament, manufacture.
White Spruce	Shelter, ornament, manufacture.
Norway Spruce.....	Shelter, ornament, manufacture.
Black Spruce.....	Shelter, ornament.
Horse Chestnut.....	Ornament.
Yellow Birch... ..	Manufacture, ornament, shelter.
Shell-bark Hickory	Manufacture, fuel, ornament, fruit.
Bitter-nut Hickory.. ..	Manufacture, fuel.
Black Cherry.....	Manufacture, ornament.
Chestnut	Manufacture, ornament, fruit.
White Cedar.....	Ornament, manufacture.
White Ash.....	Manufacture, fuel, ornament.
Blue Ash.....	Manufacture, fuel, ornament.
Green Ash	Manufacture, fuel, ornament.
Black Ash.....	Manufacture, fuel, ornament.
Honey Locust.....	Hedge, manufacture, fuel, ornament.
Black Locust.....	Manufacture, fuel, ornament.
Butter-nut, White Walnut....	Manufacture, fruit.
Black Walnut.....	Manufacture, fruit.
Pecan-hickory	Manufacture, fruit.
Red Cedar.....	Manufacture, shelter, ornament.
European Larch.....	Manufacture, shelter, ornament.
American Larch.....	Manufacture, shelter, ornament.
White Pine.....	Manufacture, shelter, ornament.
Scotch Pine.....	Manufacture, shelter, ornament.
Austrian Pine.....	Manufacture, shelter, ornament.
White Poplar.....	Shelter, fuel, manufacture.
Sycamore	Manufacture, ornament.
Red Oak	Manufacture, ornament, fuel.
White Oak	Manufacture, tanbark, ornament, fuel.
Burr Oak.....	Manufacture, ornament, fuel.
Chestnut-leaf Oak.....	Manufacture, tanbark, (coppice) ornament, fuel.
Linden, Basswood.....	Ornament, honey, manufacture.
European Linden.....	Ornament, honey, manufacture.
White Elm, American Elm....	Manufacture, fuel, shelter, ornament.
Slippery Elm, Red Elm.....	Manufacture, fuel, shelter, ornament, medicine.
Rock Elm.....	Manufacture, fuel, belts.
Tulip Tree.....	Ornament, manufacture.
White Willow.. ..	Shelter, charcoal.
Black Willow.....	Shelter.
Catalpa	Manufacture, ornament, fuel, shelter.
Cucumber Tree.....	Ornament, manufacture.

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